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THE BRAIN & DISEASES OF THE NERVOUS SYSTEM

VOL. II

NEURALGIA

STRETCH DOWSE M.D., F.R.C.P. EDIN.





NEURALGIA:

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*THE BRAIN AND DISEASES OF THE NERVOUS
SYSTEM.—VOL. II.*

NEURALGIA:

ITS NATURE AND CURATIVE TREATMENT.

BY

THOMAS STRETCH DOWSE, M.D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS IN EDINBURGH; MEMBER OF THE PATHOLOGICAL, PSYCHOLOGICAL, AND CLINICAL SOCIETIES; FELLOW OF THE MEDICAL SOCIETY OF LONDON; PHYSICIAN TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, REGENT'S PARK; PHYSICIAN TO THE NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST; FORMERLY PHYSICIAN SUPERINTENDENT OF THE CENTRAL LONDON SICK ASYLUM, HIGHGATE; AND PHYSICIAN TO THE SKIN DEPARTMENT OF CHARING CROSS HOSPITAL.

'Quantum in medico est, sanare. venit egrotum. Ipse se interimit, qui præcepta medici observare non vult.'—S. AUG.



LONDON:

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TO

SIR JOSEPH FAYRER, K.C.S.I., M.D., F.R.S.,

*(Hon. Phys. to H. M. the Queen and to F.R. H. the Prince of Wales
Physician to the Council of India, etc., etc., etc.)*

I DEDICATE THIS LITTLE WORK

IN TOKEN OF MY SINCERE ADMIRATION AND ESTEEM.

P R E F A C E.

WHEN I first entertained the idea of writing a practical Treatise on Neuralgia, I did not intend that it should form a volume of my series of works 'On the Brain and Diseases of the Nervous System.' On consideration, however, I came to the conclusion that although little knowledge exists in regard to the Pathology of Neuralgia, yet the present work might justly claim a place in a series of publications which are intended to comprehend the whole nervous system.

If the reader expects to find, in the following pages, any vague or speculative theories relative to the Pathology of Neuralgia, he will be greatly mistaken. Yet the author hopes that the reader will find therein the great question relative to the practical and curative treatment of Neuralgia discussed in a simple, comprehensive and concise manner.

Considerable care has been taken, from an anatomical standpoint, to distinguish the different forms of Neuralgia, that so, by this means, many apparently obscure pains may be traced directly to their seat of origin, and the cure of a Neuralgia be the more speedily effected.

The practice of nerve-cutting and nerve-stretching for the cure of a Neuralgia, and which was, twenty-five years ago, ignored by the greatest living surgeons of the day, has of late years received considerable attention, and many and successful cases have been recorded as the result of the operation. I have purposely said but little on this method of treatment, because I consider we

have not as yet obtained sufficient evidence to guide us to a fair estimate of its actual value.

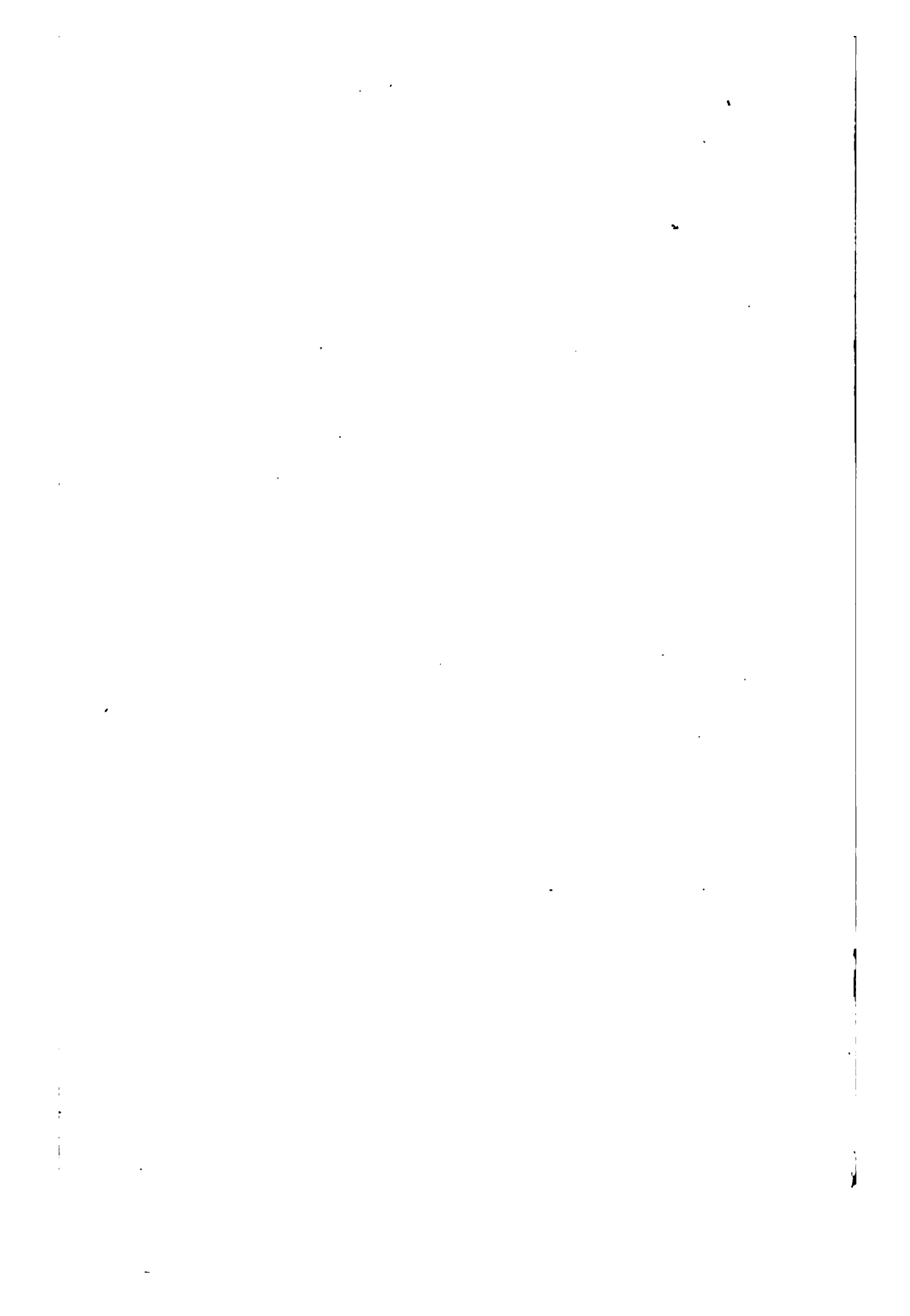
Finally, this work is specially intended for the busy medical practitioner, and it is confidently hoped that he will find it a book of ready and easy reference with regard to the treatment of the many and different forms of Neuralgia which may come under his notice.

THOMAS STRETCH DOWSE.

14, *Welbeck Street, Cavendish Square,*
March, 1880.

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NEURALGIA.

PART I.

Introduction.

THE term 'Neuralgia' is here employed to denote a 'diseased condition' of the blood or tissues of the body, and a condition which causes a more or less definite and localised painful affection of the nerves. This 'diseased condition' may be localised to one nerve, or even to a branch of a nerve; or, again, it may be general, and in direct association with many nerves. Romberg tritely expresses the pain of neuralgia as 'the prayer of the nerve for healthy blood;' and, indeed, there can be little doubt respecting that important fact. Neuralgia, whether it be local and circumscribed, or general and diffuse, intermittent or persistent, acute or chronic, producing merely slight tenderness or the deepest agony, is, in the majority of cases, due to a disordered action or a diseased condition of the nerve centres. A diseased condition of the nerve itself may be severe, and yet unattended with the torture which is usually the accompaniment of a perversion of the normal molecular action of the nerve. Molecular disturbance is due, in the larger number of instances, to faulty nutrition either of the centre, from which the nerve takes its origin, or of the tissues, throughout which its fine terminal ramifications are implanted. We do not here intend or profess to do more than to merely glance at the nature and pathology of neuralgias, as the chief object of this work is to place before the reader the most recent and successful methods of treatment which have, in modern times, been introduced for their cure. The essential function of a nerve is to transmit

impressions, of which, when in health, we are in a great measure unconscious. We see, smell, hear, taste, and define the varying sensations of touch, but we think nothing of *how* these sensations are brought about. When the eyes are intolerant of light, and the ears of sound, the skin so sensitive that the merest touch is attended with sharp pain, the limbs motionless, or in a state of agitation, coldness, or wasting, we then begin to think, and to take into consideration the important part which the nerves play in our everyday comfort and well-being.

‘There is no part of the body without nerves ; consequently, there is no part of the body which may not become the seat for neuralgic pain.’ The varieties of pain are numerous, and are frequently distinguished as tearing, boring, burning, stabbing, dull, aching, wearing, shooting, etc. Most organs are capable of becoming the seat of definite kinds of pain, which depend greatly upon the texture of the organs affected, as may be instanced in the stabbing pain of pleurisy, the racking pain of rheumatism, and the throbbing pain of inflammation. Pain denotes an exaltation of the sensations, or, as Eulenberg says, ‘We understand pain to be a gradual increase of the feeling that accompanies every sensory process.’* The nature of the pain in neuralgia, I mean in reference to its severity, will depend greatly upon the constitutional sensibility of the individual attacked ; hence, I have come to the conclusion, that there are two distinct kinds of neuralgia, the one physical and the other psycho-physical. The former may be termed an hyperæmic neurose, and of a limited character ; the latter, an anæmic neurose, and of a general character, and not limited to any one special nerve or its branches.†

* A. Eulenberg, ‘Functionelle Nervenkrankheiten,’ p. 31.

† In Ziemssen’s ‘Cyclopædia of the Practice of Medicine,’ vol. xi., Erb states : ‘So long as we are in the dark in regard to the finer molecular changes that accompany pain, and in regard to the psychological questions connected with it, no satisfactory theory of it can be given. It is unnecessary to enter into a discussion whether pain originates in augmented, or in diminished, functional activity of the centripetal nerves, although, according to our views, it cannot remain doubtful that, in the production of pain, an increased excitation originates in these paths. The state and mode of reaction of consciousness, or of the central sensory apparatus, still constitute the chief condition in all instances, whilst the peripheral apparatus and the conducting fibres, when pain

Neuralgias are common to all classes of society as well as to every period of life, every climate, every season. Neuralgia simulates every known form of disease, and it undoubtedly attacks those who, from impaired health or general weakness, are the least able to withstand its devitalising and enervating influence. It occurs most frequently in those whose nervous systems are so finely balanced, both in reference to mind and body, that the smallest exciting cause brings about a derangement in the normal functional activity of those nerve processes which constitute the nervous constitution or diathesis. To say that neuralgias are essentially hereditary would not be exactly true; but neuralgia is undoubtedly a manifestation of a condition of the nervous system, which is especially handed down from generation to generation in one or another nervous form. It may be in the form of epilepsy, hysteria, chorea, hypochondria, melancholia, intemperance or insanity. The truth of this assertion may be seen in our daily practice. A lady is now under my care who suffers from intense attacks of neuralgia of the face, and when an attack passes off, she then becomes melancholic; and the succeeding attack of neuralgia often takes the muscles of the ribs, or the loins, or the muscles of the buttocks and thigh. Her sister suffers from confirmed melancholy, and her brother is extremely hypochondriacal. Her father was a highly nervous man, and her mother died insane. However, it must be remembered that the strongest and most healthy persons by hereditary descent may, through various depressing causes, such as exposure to the varying influences of malaria, cold, damp, fever, and so on, become the confirmed subjects of neuralgia.

When investigating the cause of a neuralgia our chief aim should be to ascertain, as far as possible, whether it arises from an affection of the nerve alone, or from an acrid or morbid condition of the blood and secretions generally, or from an abnormal condition of the tissues in immediate relation with the nerve in any part of its course. We should never fail to elicit the family history, and to

is experienced, have nothing further to do than to receive the irritation caused by augmented intensity of the stimulus quite in the ordinary manner, and conduct it to the cerebrum.'

observe the diathesis and temperament of our patients, for upon the right estimate of these states a great deal of the success of our treatment will necessarily depend.

Some observers, as Benedik and Eulenburg, maintain that neuralgias are invariably attended with an inflammatory condition of the nerve. This, however, has not been confirmed in my own experience, and I do not find that it is an accepted doctrine at the present day. There are neuralgias which are due to the direct injury of a nerve, and then, indeed, we find those pathological changes which may be admitted as the result of the inflammatory process.* Neuralgias are decidedly more common amongst women than they are amongst men. Valleix found that in 469 cases 218 were men and 251 were women. Anstie states that in 100 cases 68 were women and only 32 men. In 735 cases which I noted under my care at the Central London Sick Asylum during the years 1872-73-74-75-76, 449 were women and 286 were men. Neuralgias are most common at the middle period of life, between the ages of 30 and 50, but some people have been known to suffer from neuralgia from an earlier period, and, as *in the case of epileptic seizures*, the attacks have left them during the middle period of their existence, to return with renewed vigour in old age. I have no hesitation in saying that those who suffer from confirmed neuralgia become prematurely old, and that they do not, as a rule, live beyond 60 or 65 years of age. I do not

* Concerning the pathological changes which take place in nerves, which are subject to painful impressions, we are, as pathologists, more or less ignorant, and we rarely meet with coarse anatomical changes in these nerves. In some cases these changes have been found, and they then consist, for the most part, in flattening and atrophy of the nerves, a degeneration of the nerve fibres, and with swelling and thickening of the neurilemma; but in idiopathic neuralgias these changes rarely, if ever, exist. Then we are compelled to arrive at the conclusion, that in neuralgias there exists a form of trophic (nutritive) disturbance in the sensory nerve apparatus, which is peculiar to itself. Dr. Anstie believed that all true neuralgias have their seat in the posterior roots of those spinal nerves in which pain is experienced, and that the specific change consists in atrophy of the posterior roots and of the adjoining central fibres and ganglion cells. This, however, has not been proved pathologically, and, therefore, although its probability is extremely likely, yet we are, as far as our actual knowledge goes, obliged to consider it as theoretical and unproven.

mean that they die early from the exhaustion consequent upon the attacks of pain, but that there is an invariable tendency, in association with the *neuralgic habit of body, to degenerative changes of vessels and of glands*. This is owing, doubtless, to disease in the sympathetic vaso-motor and trophic nerve centres. Neuralgia is not uncommon about the time of puberty, and this is not to be wondered at when we consider the great revolution in the child's nervous state. Important as the change necessarily is, which is taking place at this critical age, yet I cannot quite agree with Dr. Anstie in the following statement, namely that : 'The existence of any neuralgic affection in a young child, if it cannot be traced to tubercle or other recognisable organic brain disease, is *primâ facie* ground for suspicion of previous sexual irritation ;' * Dr. Anstie, however, gives a case which is certainly in support of his argument. (See case stated below.) †

I have had, upon more than one occasion, my suspicions aroused concerning young people who have been brought to me suffering from neuralgic pains, but I have not been able, excepting in rare cases, to bear out this statement of Dr. Anstie. In young children it is only reasonable to presume that reflex neuralgias, if they exist at all, are of more common occurrence than at almost any other period of life.

Neuralgic Paroxysm.—This is usually preceded by *tenderness or increased sensibility* of the part, through which an especial nerve and its branches ramify ; there may be twitchings of the muscles,

* Dr. Anstie very tritely puts it in the following words (Anstie on 'Neuralgic and its Counterfeits') : 'From the moment that puberty arrives, all is changed in the status of the nervous system. In the stir and tumult which pervades the organism, and especially in the enormous diversion of its nutritive and formative energy to the evolution of the generative organs and the correlative sexual instincts, the delicate apparatus of the nervous system is apt to be overwhelmed or left behind in the race of development. Under these circumstances, the tendency to neuralgic affections rapidly increases.'

† A neuralgia of the left breast occurred in a patient only twelve years of age, but the breasts were considerably developed. The face was haggard, and there was an almost choreic fidgetiness about the child, and a very unprepossessing expression of countenance. The result of inquiries left no doubt that the patient was much addicted to self-abuse.

pricking sensations, or even coldness of the parts. The pain which is the characteristic feature of the disease, usually commences insidiously, and accumulates in intensity and severity, until the sufferer seems to be going mad with the torture, which he is compelled to endure. It may last for a variable period, sometimes for several hours, and at other times ceasing in the course of a few minutes; occasionally, it comes to an end quite suddenly, or, again, it passes off gradually. The intensity of the paroxysm having subsided, the neuralgic surface, not unfrequently, becomes almost devoid of sensibility, except in certain spots, which are known as 'painful spots.' Trousseau, whose authority and great experience no one can doubt, lays particular stress upon the value of these painful spots, as diagnostic signs, whereby a neuralgia can be at once distinguished from a more serious disease, as pleurisy, for instance.

These painful spots, according to Trousseau, bear a direct ratio, in reference to their sensitiveness, with the intensity of the neuralgic paroxysm, and also with the area or district over which the pain radiates. 'The central painful spot is to be found in connection with the spinous process of the vertebræ, beneath which the nerves affected are given off.' For instance, in neuralgia of the fifth nerve, the painful spot will be under the occiput. In neuralgia of the neck and arm, it will be found to be over the seventh cervical vertebra, and so on. I have, over and over again, confirmed this view of Trousseau's; but we find, that if the nerve is not painful throughout the whole of its course, it is, however, usually so, not only at the point of its emergence from its bony canal, but also at its point of emergence from a muscular aponeurosis, or again where it becomes cutaneous. It is not a difficult matter sometimes to trace out by pressure these painful spots, or even the track of the nerve, by drawing a needle carefully over the skin; but we must not be disappointed if they are not always to be found, and very frequently they are not. Neuralgia, like many other nervous diseases, is known for its *intermittency* and *periodicity*. Such a case is thus graphically described by Trousseau:

'In the year 1850, I saw a lady suffering from cancer, which involved the inner wall of the womb, and it seemed as if the form of the disease, which is somewhat rare, had the sad privilege of giving rise to intermittent and periodic pain. I have never known another case in which such excruciating pain was felt. When the pain was at its maximum, the unfortunate patient rolled on the floor, uttering fearful groans. It recurred every day, but strangely enough, it returned from half an hour to three quarters of an hour or an hour later each time, so that, in the space of a month or more, the hour of attack had gone round the clock.'

Mental Disturbances, in my experience, have been much more frequently associated with neuralgia than most authorities admit, but these neuralgias have been, almost invariably, confined to the stomach, the bowels, the womb, and the ovaries. I have certainly rarely seen them associated with tic doloieux, intercostal or sciatic neuralgia. Certainly I cannot quite agree with those who maintain that the habitual neuralgic is in other respects healthful. It is quite true that the temperature may be normal, the tongue clean, and the bowels regular, but then there are invariably to be found signs of rapid exhaustion, fatigue, sour sweatings, and an acrid condition both of the blood, the urine, and the secretions generally.

The Diagnosis of a Neuralgia rests mainly upon the following points : *

1. That the pain is limited to a definite nerve-path, either trunk, branch, or area of distribution, and that it is usually confined to one side.
2. That the pain is, without any obvious reason, either intermittent, or at least distinctly remitting in character.
3. That the pain presents very peculiar characters and is extraordinarily acute.
4. That there are certain spots on the course of the nerve, or in the area of its distribution, which are very sensitive to pressure (*points douloureux*).

* Erb, 'Diseases of Peripheral Cerebro-Spinal Nerves,' Ziemssen's 'Cyclo-pædia of the Practice of Medicine,' vol. xi., p. 62.

5. That the pain is associated with sensory-motor, and vaso-motor, and secretory phenomena.

6. That the pain is unaccompanied by any inflammatory or local symptom, or any general disturbance of health, at all corresponding with the amount of subjective disorder.

In making our diagnosis, we must be careful not to mistake the following effects for neuralgia: 1. Mere muscular pain; 2. The pains of latent gout; 3. The lightning-like pains of loco-motor ataxy; 4. The pains of the hypochondriacal; 5. The pains due to the excessive use of alcohol; 6. The pains of anæmic poisoning; 7. Spinal irritation, colic, and other pains of mere peripheral irritation. I can only say, from my own experience, that to differentiate with exactitude between these varying conditions and neuralgia is not at all times an easy task, and I have not unfrequently been compelled to defer my diagnosis until I have been confirmed in my opinion by the action of remedial agents and by watching the case carefully for some time.

In reference to the cure of neuralgia, it is always necessary to give an opinion somewhat guarded. *All neuralgias are curable, if the disease be taken at the right time and the proper remedies are employed, according to the individual constitution and the nerves affected.*

If a neuralgia be due to cancer or tumour, or to any other serious organic mischief, then to say that such is curable would be to say that cancer itself is curable, and in like manner, when a neuralgia is due to senile, textural and vascular changes, the cure is in a measure doubtful, but most certainly not impossible. Now, seeing that cancer and other malignant growths form but a very small percentage of those diseases which carry off humanity, and that the proportion of neuralgias due to senile changes are comparatively rare, I feel that I am quite right in stating that neuralgias are unquestionably curable, and most certainly those which are due to a malarial cause. Some neuralgias of the face and upper extremities are due to an actual disease of the brain, but this by no means leads us to

the conclusion that upon this account they are incurable, although it is necessary for us to be guarded in making a diagnosis and in giving an opinion. Neuralgias of the arm are certainly more curable than those of the leg or of the face. *In youth and in the middle period of life neuralgias are most curable. In old age they are much less so,* and, somewhat strange to say, experience goes to prove that the prognosis in females is less hopeful than in males.

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IF we are not able to cure neuralgias with greater success than did our forefathers some twenty or thirty years ago, it is, however, unquestionably, the fault of the practitioner of the present day, if he fail to relieve pain with greater certainty, precision and exactitude than did physicians who practised in times gone by. But he who would be successful in the relief of pain must not only possess a complete knowledge of, and mastery over, every remedy which nature and art have placed at his disposal, but he must make it his especial study to find out, by the most methodical and systematic investigation, in what way certain remedies possess a value over others, according to the constitutional as well as the mental characteristics of his patients. Without this knowledge it is impossible to relieve a neuralgia, much less to cure it. We are as sure, as we can be of anything, that a large number of individuals are born neuralgic, just as, in other cases, we know and can predicate from patients' constitutional states and hereditary history, that if they die from so-called natural causes, either disease of the heart, or kidneys, or of the lungs, etc., will be the channels through which their vital force will be ultimately expended. If we but look at the matter merely from a common-sense point of view, it certainly must be evident that the most difficult task with which the physician has to contend is the task of acquiring, as regards our patients, a knowledge of those formative laws of nutrition which individually, from some cause best known to their progenitors, have become so changed from their primitive or normal standard that development, instead of being progressive and healthful, has become retrogressive and diseased. This is a task by no means easy, for the reason that, in neuralgic patients especially, we have to deal with a type or idiosyncratic individuality of a fundamentally nervous nature, whereby the inherent mental

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qualities in association with the physical are in reality and in fact disassociated, so that the remedial agencies placed at our disposal have not that chance to effect a radical and constitutional change which, in the majority of instances, we have to look for before we can hope to effect a cure.

It must be admitted that, although drugs and medical appliances of every kind are to be had recourse to for the cure and relief of neuralgia, yet the great object of the medical man should be to build up his patients' constitution by due care and attention to climate, soil, vocation, and general mode of life, and dietary, in order that his nervous system may become so toned and strengthened, that a neuralgic attack, if it should occur, should be slight and scarcely noticed. *Healthful exercise, dry soil, pure water, non-exposure to cold, avoidance of fatigue, sufficient sleep and rest, and, of no less importance, moral training—are under all circumstances absolutely essential.* With regard to exercise, there is none so beneficial as exercise on horseback, but the more especially is this advisable for women and for children. *Walking, if it produces the least fatigue or distress, is better avoided unless within a distance that does not tire.* Gymnastics are in some cases of great value, but over-muscular strain of any kind should never be attempted without medical advice, particularly by young people. A neuralgia may be due, as I have seen in my practice, to actual spinal disease, which has not been detected, and very serious mischief has resulted through the recommendation of too great muscular exertion. Soil and climate ought to be taken into consideration with regard to the neuralgic, just as much as we are necessitated to do in reference to the asthmatic and the consumptive. If a neuralgic live upon a soil which is especially productive (as some soils are known to be) of rheumatism and neuralgia, or even ague, it is a matter of unquestionable difficulty to ward off the attacks, no matter what constitutional measures are adopted to do so. A dry, gravelly, or loamy soil, of sufficient altitude to be bracing and not relaxing, and yet not too much exposed to north or north-east winds, will be found the best. *Undue exposure to cold, and to damp air, either by night or by day, ought especially to be avoided.* The

body should be kept warm, and not heavily, but lightly clad; flannel should invariably be worn next to the skin, and change of attire, to suit the season, should always be well and seriously considered before effected. Many very troublesome neuralgias have been engendered through want of proper precaution in this respect. It is an absolute necessity that the feet should be kept warm and dry. Thick boots, cork soles, warm socks, are apparently trivial matters, but they are of prime importance to those who are predisposed to attacks of neuralgia, and other enervating affections of the nervous system. It is a mistake to rashly attempt what is frequently termed the hardening process of cure, for it rarely succeeds, unless it is based upon the most scientific and approved methods of treatment, which will be considered as we proceed. The mode of taking a Turkish bath, for example, if it is to prove beneficial, must vary greatly according to the individual, and the disease for which it is had recourse to. There is nothing more absurd and unscientific than taking a Turkish bath as a curative agent, according to the ordinary stereotyped process adopted in this country. To a man in health, who merely wants a washing, or 'pick me up,' it is not of much importance in what way he sweats or cools himself, but when the bath is used for a definite purpose in the curative treatment of disease, it is then quite a different thing, and many points demand our serious consideration. I will give one case to illustrate the truth of this observation:

A poor fellow suffering from consumption was ordered by his medical man to take Turkish baths, and it so happened that I chanced to be having a bath at the same time that this young gentleman was having his. Whilst we were in room No. 2, he was seized with a most severe attack of hæmorrhage from the lungs, and without saying a word, he darted to the coldest room, and the attendant poured cold water down the spine, yet the hæmorrhage became worse, and it was with some difficulty that I persuaded him to proceed to the *hottest* room, where, when he did so, much to his astonishment and gratification, the bleeding ceased at once.

The cold morning bath, or tub, as it is familiarly styled, is another mode of hardening, which is used far too indiscriminately.

For the healthy, whose vessels and nerves work in every way harmoniously, it refreshes and tones in a perfectly natural way; but too often it is productive of the most serious consequences in many cases of debility, and particularly in those persons whose nervous centres are liable to congestions. With weakly girls, about, or soon after the time of puberty, I have known the Sitz bath, and especially when used the last thing at night, to disarrange their nervous systems, both from a moral as well as a material point of view, so that instead of its being a remedy, it is positively hurtful, and increases the irritability and nervous susceptibility of these parts, which it was anticipated would, under its influence, become soothed and strengthened.

In regard to sea-bathing, we have in cold salt-water an agent of undoubted value; but weakly persons should always bathe an hour or so after a light breakfast, and not remain in the water for more than seven or ten minutes at one time. I am quite sure there are equal, if not greater, strengthening properties in cold river-water, and I am surprised that river-bathing is not in more general use. Local application of cold water should never be applied to persons of a highly nervous temperament, unless it be through the advice of some medical man in every way competent to judge.

Avoidance of Fatigue.—*It would be impossible to overrate the value of this advice to the neuralgic. 'Avoid fatigue, and never upon any account allow yourself to become exhausted.'* Persons who suffer from neuralgia are like epileptics, of a more or less impulsive, emotional, sensitive and unstable nature, and as in the epileptic, so in the neuralgic, we have to study how we can in every way *prevent overstrain of mind or body*. I cannot enter into a full consideration of this very important subject, which, by the way, is one upon which many authorities differ. Yet I think that the difference amongst them is more seeming than real, and only arises in consequence of the, at times, varying nervous state of the neuralgic patients. Any one who has taken the trouble to gauge, in a general and differential manner, the varying and variable

character of the '*nervous force*,' as demonstrated in the every day life and acts of the neuralgic, the epileptic, the hysteric, and the insane, must have noted this essential peculiarity. We find that they have the power of sustaining their *nervous energy* for a prolonged period, through some agency which engages their undivided attention, and that not unfrequently they never, during their whole lives, regain the normal nerve-power, 'either in quantity or quality' which such an '*overstrain*' has so severely taxed. Examples of the kind are constantly being brought before our notice. But they have no relationship whatever in common with ordinary sustained muscular exertion, such as that which an Alpine tourist experiences for the first few days of his walking excursion, after having possibly led a sedentary life for many months previously. The best example of such sustained nervous energy, exertion or strain which I can offer, however, is that of the exhaustion or overstrain arising from the duties and anxieties experienced by one fond relative nursing another during a severe and protracted illness. Here we have developed an overstrain of the mind as well as of the body, from which often dates the commencement of an *exhaustion*, which is followed by severe neuralgic seizures, melancholia, dementia, or premature death. 'The regular *accumulation* of "*nervous force*" in due relation to its *expenditure*, combined with a due share of conservative energy or latent force, equivalent to the extraordinary as well as ordinary demands requisite for the necessities of life, constitutes a healthfulness of body and mind, which rarely, if ever, falls to the lot of the *nervous* to enjoy.' *Yet so much can be done by a scientific and rational mode of treatment, that many cases of nervous affection, which in unscientific hands have been looked upon as forlorn and hopeless, yield to proper treatment.*

Overwork and worry, as distinct from deep mental anxiety, such as that which has been described by Mr. Gregg as 'life at high pressure,' do without doubt produce an overstrain of the nervous system in some people, and particularly in those persons whose nervous states are readily unstrung. In all classes of society the keenest competition exists in the great race for success. The

high mental tension to which this mode of living necessarily gives rise does not, I am willing to admit, produce such disastrous effects upon society as many reasoners upon this subject are desirous to prove. Yet in those whose nervous systems are by nature weak and unstable, it has a most serious and destructive influence. With regard to other nervous affections, I have had patients come to consult me with neuralgic pains of the liver or of a purely dyspeptic character, and, upon questioning them, it has been quite clear that their malady was due almost entirely to their unceasing attention to their business or professional pursuits. Many persons after a hard and, in many cases, exciting day's work, during which they have scarcely given themselves time to eat a hurried meal, take home their books and carry on their labours until a late hour of the night—a practice invariably associated with a deficiency of bodily exercise, short restless nights, and disturbed sleep. Again, in the morning they hurry to catch the train, and, after having glanced at the money article in the *Times*, to find, probably, that their speculations of the previous day are anything but satisfactory, they then light up a cigar or put on a pipe, and closet themselves in the foul air of the smoking compartment of a train, possibly combining therewith the pestilential air of the underground railway; and this goes on from day to day, and week to week, and year to year, when suddenly the overstrain is felt, and a sound constitution is, perhaps, radically deranged, and then cessation from work, a thorough rest, and a complete change are requisite and absolutely necessary to repair the damage which such a reckless mode of life has produced.

In the young, however undesirable it may at first sight appear, we must use every indirect (and, if need be, direct) means to restrain the precocious sexual appetite. 'Premature sexual excesses must be checked at any cost,' and this can always to a certain extent be accomplished by timely and judicious interference especially if the tendency be controlled before it becomes a morbid passion, or, as in some cases, a most wicked and mischievous habit. This can be best accomplished by training and educating the mind of the child aright, by teaching it to eschew

those things which be evil and to follow the examples and precepts of the great and good, by constantly bringing before its mind those great qualities of self-restraint and self-control, and those especial virtues of manliness and nobility of character which tend to the perfectibility of human nature. It is at all times a difficult matter to choose the right companions for a child, still much can be done in this respect. A point of great importance is to prevent the child from reading impure and improper literature, to keep it from leading a sedentary life, and to check all morbid sentimentalities of whatever nature. The brain should never be crammed, but if the child has instinctively a taste for any innocent pursuit, the taste might with good reason be cultivated. Healthful exercise at this period of life, so as to ensure bodily fatigue (if not carried too far) is almost an absolute necessity. The physical development of the child must at all times be established, and if this be done in a right manner, the mind will surely participate in the same healthful action. It often seems strange to the physician when parents cannot, or will not, understand the cause of a child's indisposition. Its restlessness, inattentiveness, disinclination to associate with its fellows, inactivity almost beyond laziness, the dull eye, the drooping lid, sometimes the drowsiness, the bashful habit, the pale cheek, the delicate or, it may be, the voracious appetite, the wanting to be alone, the headache, the burning palm alternating with the moist hand, all these, with others, are signs which certainly predicate for their cause at this age some such sexual irregularity. Those who are blind to the due recognition of this irregularity, and to its pernicious and devitalising agency, must indeed be wanting in that store of common sense which is so essential for the proper management and training of the young.

Dietary.—Concerning the great importance of diet in the curative treatment of neuralgia, it would be impossible to say too much, or extol its virtues too highly. To cure a neuralgia, without strict attention to this very valuable aid, has been, in my experience, almost an impossibility. I cannot comprehend upon

what grounds some physicians do persistently deny their patients the use of alcohol in any form whatever for the relief of pain ; and if the reason be to prevent their patients from eventually becoming habitual drinkers, I consider their doctrine to be unscientific and unwise. The value of pure alcohol in neuralgia, if carefully and discreetly administered, cannot possibly be over-estimated. In the sufferer from neuralgia we have unquestionable evidence of the absence of that recuperative power which normally results from the oxidizing agency of combustion, and is so intimately connected with the molecular interchange of tissue, and which really means want of proper nutritious assimilation. There is a deficiency of heat-giving power in neuralgics ; and as we know that nearly all the animal heat is produced by the oxidation in the body of nitrogen, carbon, and hydrogen—and especially of carbon and hydrogen, but more particularly of the latter—it is apparent that the physician has to consider the best means by which he can supply to the body that material, whose elements are so combined that they may readily yield to chemical interchange, and raise the standard of heat and vitality, just as in the case of the steam-engine, where the latent energy of the fuel is developed into heat by combustion, and the engine itself is merely the mechanism for transmitting the heat into force. We have, then, to consider how we can best effect this object, and what articles of diet should be called into requisition. In the first place, let me state that in almost every disease of the nervous system frequent feeding of a highly nutritious and fatty nature is essential, and alcohol should in the majority of cases be taken with the food. We know that in certain diseases of the nervous system the craving for food is excessive, and that the digestive powers are equally active, so that it is absolutely necessary to overfeed, rather than underfeed, our patients. We must, however, in these cases, as in all others, take into our consideration the constitutional state of our patients. To lay down a rule, that all patients suffering from neuralgia should be fed upon oils of different kinds, cream, butter, and such like, *ad nauseam*, is simply absurd and unreasonable. Many neuralgic patients require nothing of the kind. .

**CASE I.—NEURALGIA CURED BY OPIUM, SUGAR,
AND WINE.**

‘A young, delicate lady, of highly nervous temperament, about 17 years of age, came under my care. She was suffering acutely from neuralgia, sometimes of the face, then of the breast, neck, shoulder, and arm. The catamenia were regular, but she was emaciated and pale. She had consulted several physicians of repute, who had prescribed fats of all sorts, no alcohol of any kind being allowed, until she became so nauseated and dyspeptic, that her life was a burden to her. She fattened considerably, and was cured of her neuralgia completely in three weeks by taking increasing quantities of loaf-sugar, and a quarter of a grain of the extract of opium three times a day—food, with a small quantity of wine, being given every two hours.’

Were I asked to lay down a rule for the treatment of those cases which require an especial fatty diet, or a liberal use of alcohol, and those which do not, I should say that it was almost impossible to do so. There are so many practical points to be considered, which are only made evident by individual observation, and which certainly are without the range of systematic description, unless it be of so lengthy and detailed a nature as to be inconsistent with a *précis* of this kind. Yet these will be considered more in detail when the treatment of specific neuralgias is dwelt upon. Farinaceous diet, with suet, milk, cream, eggs, and a fair allowance of animal food, are called for under all circumstances. The wine of St. Raphael, as an ordinary table drink, may be taken advantageously. I never as a rule order my patients any of the light French or German wines. As I have mentioned that stimulating drinks must be taken by the neuralgic, it will be found useful, and in fact necessary, to vary them. I cured a severe case of neuralgia of the fifth nerve, in a gentleman, by compelling him to give up his claret and drink copiously of draught stout, which he at first declared to be an impossibility. He, however, had an attack of gout, which readily yielded to treatment, and from that time his neuralgia entirely left him.

Electricity and Galvanism have of late years come in for a

fair share of popularity in the curative treatment of neuralgia, and certainly in some instances their efficacy has been truly remarkable. I have often been astonished with the decided action of both these agents in relieving pain. For many years I was inclined to think lightly of their value, but recently, from more extensive application, I have been assured of their remedial powers. Erb says: 'Faradization diminishes the excitability of the sensory nerves: it takes away abnormal stimuli from them, it modifies their nutrition, allays hyperæmia, and lastly acts as a derivative, and thus fulfils several indications; it is chiefly useful in peripheric neuralgia, when the nerves can be reached by the current. Galvanism, on the other hand, has the same action upon the peripheral nerves, whilst in addition it is very effective in deep-seated neuralgias. Moreover, by its influence on the vessels, upon exudations, and the processes of nutrition, it exerts a wide influence on those neuralgias which are uninfluenced by the electric current.'*

I have often found a neuralgia yield to the successive action of, first, the continuous current for four or five minutes, followed immediately by faradization for about the same length of time, when neither galvanization nor faradization alone exerted any specific curative influence. The mode of procedure, which I usually adopt, is to apply the positive pole (anode) to the painful nerve, and the negative pole (cathode) to the spine, whether there be any marked painful spot in this region or not. The strength of the current should be varied for the first minute or two, and then gradually increased. I never apply the current for more than a quarter of an hour at one sitting, rarely for more than ten minutes. Should, however, no appreciable good effect be produced after the first few applications, it may be looked upon as unlikely to be of any benefit. On the other hand, if the smallest success is noted from its use, it should then be continued every day until a cure be realised. I have cured many neuralgias of a rheumatic and muscular character by a single application when other means have signally failed. Still, in some instances,

* Ziemssen's 'Cyclopædia of Medicine,' vol. ii.

I have been grievously disappointed ; but these drawbacks one meets with in all remedies, more or less, so that, upon the whole, there can be no doubt whatever of the beneficial influence of this treatment.

Mechanical Causes of Neuralgia.—To successfully treat a neuralgia, the *first* question which the physician has to consider when the neuralgic patient comes before him is this : ‘ To what is this neuralgia due ? ’ 1. Is it caused by the presence of a foreign body ? for, if this be proved, it is of the greatest comfort to the patient, and its removal will at once relieve him of all future pain. 2. Is it caused by some growth, either in the nerve or in the surrounding tissue, which acts *mechanically* in compressing the nerve, or even irritating some of its fibres ? A neuromatous growth may be considered a typical cause of this form of neuralgia, and with its removal the agonising pain it produces is immediately at an end. The same may be said of other tumours, and of inflammatory thickening of the lining membranes of bony canals through which nerves (especially the fifth) have to travel in making their exit from the skull. Tic doloireux and neuralgias of the ear are familiar examples. One of the most common causes of abdominal neuralgias and sciatica is the distension and impaction of the lower bowel, and, in fact, of the small intestines, from a hardened mass of fæcal matter, and until its removal be effected by means of a strong turpentine injection, it often causes the patient the most violent pains.

CASE II.—NEURALGIA OF RECTUM AND ANUS, CAUSED BY IMPACTED FÆCES, CURED BY TURPENTINE ENEMA.

‘ A lady patient of mine, over fifty years of age, suffered the most intense agony from neuralgia of the lower bowel, in immediate proximity to the anus. The bowels had been acting irregularly for some time, no fissure or hemorrhoids or congestion of the veins could be detected, neither did the rectum or colon contain any impacted masses of fæcal matter ; yet upon making pressure at the upper part of the rectum, and by introducing one hand freely whilst she was under chloroform, I detected what I knew must be either a malignant growth or a mass of fæces. All

doubts upon this point were removed by the introduction into the bowel of a strong turpentine enema, when the ilium was at once relieved of an unusual collection of fæcal matter and the neuralgia vanished. It returned again once or twice at intervals, but a strong pill of strychnine and capsicum set the bowel to work, and since this she has been quite free from her troublesome complaint.'

Whilst referring to mechanical causes in the production of neuralgia, it would be absurd to pass over without comment the many forms of neuralgia of the face, of the eye, and of the ear, which are due to a diseased condition of the teeth and of the jaws. Examples of the kind are constantly coming before us, and could be detailed in any number; but in reference to treatment, we frequently find our remedies of no avail, simply for the reason that we do not pay sufficient attention to the frequently *remote* causes of neuralgia in relation to the actual seat of pain.*

CASE III.—NEURALGIA OF THE EYE, CAUSED BY AN INFLAMED DENTAL NERVE, CURED IMMEDIATELY BY THE REMOVAL OF THE TOOTH.

'A gentleman of healthy appearance, age 23, consulted me in the spring of 1878 for a severe neuralgia of the left eye-ball, influencing slightly, but only slightly, the brow. It came on usually about four in the afternoon, when the eye became intensely congested, and the sight for the time almost obliterated. He had obtained advice from many medical men, but with only temporary benefit. He had been frequently asked if his teeth were sound, and so to all appearance they really were. I carefully percussed each tooth from behind forwards, and he experienced no pain until I touched the centre of the first bicuspid pretty sharply, when almost instantaneously the attack of neuralgia came on. The tooth was extracted, and there was an end of the matter; the fang of the tooth was diseased at its extreme end, and the nerve was inflamed and thickened.'

This case is interesting and typical, but we must not be led away by a few isolated cases of this kind. I have seen tooth after

* Cartwright, Association of Surgeons practising Dental Surgery, March 28th, 1877.

tooth removed without any benefit resulting, and the neuralgia has remained as bad as ever. Several instances of this kind have come before my notice, where relief from pain has only been obtained by gouging away some portion of the jaw,* or cutting down upon the dental nerve and removing a part of it.

Sympathetic and reflex neuralgias are of frequent occurrence, and are generally made worse if treated by specific remedies. A diseased liver, for instance, produces pain in the right shoulder, whilst certain affections of the heart produce pain in the back, extending down the left arm. Sir Benjamin Brodie gives the following three interesting cases† of this sympathetic neuralgia.

CASE IV.—REFLEX NEURALGIA OF THE FOOT, CURED BY A LARGE DOSE OF ALKALI.

‘A gentleman awoke in the middle of the night labouring under a severe pain in one foot, at the same time that some other sensation, to which he was not accustomed, indicated the existence of an unusual quantity of acid in the stomach. To relieve the latter, he swallowed a large dose of an alkaline medicine. Immediately on the acid in the stomach having been thus neutralised, the pain in the foot left him.’

CASE V.—REFLEX NEURALGIA OF THE HEEL, FROM DYSPEPSIA, CURED BY VOMITING.

‘The late Dr. Wollaston was accustomed to relate the following history: He ate some ice-cream after dinner, which his stomach seemed to be incapable of digesting. Sometime afterwards, when he had left the table to go into the drawing-room, he found himself lame from a violent pain in one ankle. Suddenly he became sick—the ice-cream was rejected from the stomach, and this was followed by an instantaneous relief of the pain in the foot.’

CASE VI.—REFLEX NEURALGIA OF THE FOOT, CURED BY THE INTRODUCTION OF A BOUGIE INTO THE URETHRA.

‘A gentleman consulted me concerning a pain in one instep. The pain was severe, causing lameness, so that he walked with

* Savory, *Lancet*, July 5th, 1875.

† Brodie, ‘Local Nervous Affections,’ 1873.

difficulty ; but there was neither swelling nor, except the pain, any sign of inflammation. I prescribed some remedies, which were, however, of no avail. One morning he called upon me, still suffering from the pain in the foot, and so lame that he could not get out of the carriage and walk into the house without the assistance of his servant. Now, however, he complained of another symptom—he had a difficulty of making water. He had laboured under a stricture of the urethra for many years, and had occasionally used bougies. Of late the stricture had caused more inconvenience than usual, but he had abstained from mentioning it, thinking that it would be better that he should, if possible, be relieved of the pain in the foot before any treatment was adopted on account of the stricture. Under these circumstances I introduced a bougie, which penetrated the stricture and entered the bladder. *Immediately on the bougie having been used the pain in the foot abated*, and in less than a quarter of an hour he left the house free from pain, and walked without the slightest difficulty.’

Instances of the kind here narrated could be multiplied *ad infinitum*, but these are enough to illustrate practically what we understand by a sympathetic neuralgia. My experience of the treatment of neuralgia leads me to this conclusion, namely, that, as a general rule, it is always advisable, even during the administration of specific remedies, such as strychnine, phosphorus, atropine, arsenic, and so on, to give alterative drugs, which act upon the liver and so upon the intestinal glands and mucous membranes, and such drugs, for instance, as calomel, blue pill, Plummer’s pill, podophyllin, euonymin, watery extract of aloes, guaiacum, capsicum, nux vomica, etc. ‘The most persistent case of neuralgia of the face that I ever met with, and which would not yield to any specific remedies, immediately gave way to five grains of quinine after the administration of an emetic of tartarised antimony, which was followed by a purge of calomel and compound scammony powder.’ I am quite sure that practitioners of medicine are often misled by the condition of the tongue in these, as in many other cases. If the tongue be clean and the bowels open, we must not be led into the supposition that alteratives, stomachics and aperients are not required. The practical physician must have

proved that many a drug which is otherwise inoperative becomes actively operative for the relief of pain after the liver and bowels have been well acted upon. The celebrated Abernethy used to relate in his lectures many instances of tic which he had succeeded in curing by measures which were directed solely to remedying some faulty state of the stomach and bowels. He had a dictum that, in patients who suffer under this disease, there were always two functions wrong, those of the nervous system on the one hand, and those of the digestive system on the other. 'The two,' he used to say, 'were the common parents of a numerous progeny of very dissimilar local diseases. Take away one of the parents, and there will be no more propagation.'* Sir Charles Bell held somewhat similar *very practical views*. He achieved the cure of patients, upon whom much previous treatment had been expended in vain, by some pills composed of cathartic extract, croton oil, and galbanum. He mixed one or two drops of the oleum croton tigilii with a drachm of the compound extract of colocynth, and gave five grains of this mass with ten grains of the compound galbanum pill at bedtime. My colleague and friend, Dr. Timms, said to me the other day, 'I have been suffering severely from sciatica;' and upon my asking him what remedy he used, his answer was, 'Why, large doses of bicarbonate of soda and potash.' They correct the acidity which gives rise to the neuralgia, and so cure it. We cannot afford to lose sight of these valuable facts from practical men of eminence like those we have just referred to, although the precise *modus operandi* of the remedies may be called into question. The saliva should be tested with litmus-paper in every case of neuralgia, and, if found to have an acid reaction, the effervescing citrates of iron, quinine and strychnine will be of essential service.

Specific Remedies for Neuralgia.

These are numerous, but we will only consider those which have fairly stood the test of time and of experience. There can be no doubt that the aid of the surgeon is oftentimes of absolute

* Sir Thomas Watson, 'Practice of Physic,' vol. i. p. 749, 1871.

necessity, yet it should be, in my opinion, an absolute rule that nerve-cutting or stretching should not be had recourse to, excepting in those very severe and agonising cases which have resisted all other forms of treatment.

Nerve-Stretching.—Mr. Callender, in a clinical lecture which he delivered at St. Bartholomew's Hospital,* gives some interesting and important information relative to this subject. He asks, 'Is the cure from nerve-stretching permanent? The experience of the operation, from the few cases in which it has been practised, are too recent to enable us to reply to this question.' It is known that a nerve may be stretched with some force, and that no impairment, either of motion or sensation, will necessarily follow; and it is somewhat astonishing how the main trunk of a nerve may be thus interfered with, and no serious results ensue, whilst, on the other hand, the peripheral twigs will, from slight irritation, set up the most serious disturbance in the nervous centres, not unfrequently terminating in death. The chief point for the surgeon to consider before he hopes to cure a neuralgia by nerve-stretching is this—How far are the nervous centres involved? If the inflammation, or intrinsic irritation, extends along the whole course of the nerve to its ganglion, and even to the spinal cord (which may be surmised if there be extensive signs of perturbed nervous action), then nerve-stretching must be productive of the most serious mischief.

Again, if such be not the case, then the nerves may be exposed, stretched, and even roughly handled without any mischief ensuing or their formation becoming interfered with. M. Duplay, at a meeting of the Société de Chirurgie, Dec. 6th, 1878, reported two interesting cases of nerve-stretching for injuries to the forearm and hand; paralysis of the muscles had followed the injuries, but after exposing the nerves, which were found to be inflamed, and stretching them, both sensibility and movement returned.' 'Dr. Weir Mitchell† gives a curious illustration of how far a

* *Lancet*, June 26th, 1875.

† 'Injuries of Nerves,' 1872, p. 24.

nerve may be meddled with, before losing its power to convey impressions.' 'In a case of hospital gangrene of the thigh, resulting in an enormous cavity, the sciatic nerve was left intact. During one of the dressings this large trunk was at first quite roughly drawn out of the wound, and afterwards pushed down to the bottom or side of the cavity, by the dressing employed. Some pain resulted, as may be supposed, but the sense of touch was scarcely disturbed. I witnessed the removal of the dressings. The nerve must have been pushed fully four or five inches out of its path and very much elongated.'

Nerve-Cutting for Neuralgia.—The nerve may be merely divided across by the knife, or a piece may be excised. I have never performed this operation myself, and in no single case which has come under my care have I thought it justifiable, or, indeed, have I found it necessary, and the weight of evidence is certainly against such a mode of procedure. Many good results, however, have been recorded by surgeons of great eminence abroad, as, Nelaton, Nussbaum, etc., as well as by many eminent surgeons in this country. The operation is usually confined to the sensory divisions of the trifacial nerve, and, somewhat remarkable to relate, the greatest cures have been effected when the neuralgia has been thought to be due to some central cause. Such a statement as this, is, however, a matter of opinion. M. Lasalle says * that resection of the nerve is the only efficient way of soothing a chronic neuralgia. It ought to be performed either beyond the painful branches, or between them and the root of the nerve, as far as possible from its termination. In cases of peripheric neuralgia, the pain ceases almost instantaneously after the operation, *but if its cause* be in the *nervous centres*, the pain is only *temporarily* relieved. There can be no question that in the majority of instances, either of inveterate or less severe neuralgias, where the knife has been used, the neuralgia has returned in a worse form than before, and the reason for this must be at once apparent when we consider the physiological connection between

* 'Thèse de Paris,' 1877.

the nerve periphery and the nervous centre ; but I shall refer to this point again, when speaking of the value of chloral in destroying the morbid sensibility of nerves.

Compression of the Nerve in Neuralgia.—This is a palliative mode of treatment, which certainly has some advantages. If pressure be carefully and persistently maintained, it destroys the irritability of the nerve, although for a short time, when the pressure is first being exerted, it excites the irritability of the nerve.

CASE VII.—NEURALGIA OF THE LEG, CURED BY THE APPLICATION OF ESMARCH'S BAND.

'In the case of a lady, who consulted me in the fall of the year 1878 for severe neuralgia of the external cutaneous nerve of the right leg, for which every remedy, save section of the nerve, had been tried, I found an Esmarch bandage, firmly applied for ten or fifteen minutes (sometime previous to the attacks), of the greatest service. This mode of treatment was continued with her for three weeks with the most satisfactory results, and at the end of a month she left town for the country perfectly cured. In this case I cannot say if the pressure upon the nerve alone effected the cure, and yet it is quite reasonable to conjecture that the emptying of the vessels had something to do with its accomplishment.

Cutting off the Blood-Supply to the Brain for Inveterate Facial Neuralgia.—This is a mode of practice rarely, if ever, adopted in this country ; but Dr. Parturban speaks very lightly of tying the carotid artery for severe facial neuralgia. In the *Lancet* of Dec. 4th, 1875, we find the following account : 'At the annual meeting of the doctors of Grätz, Dr. Parturban read a paper on this question (deligation of the carotid artery for neuralgia), in which he offered no theory as to the mode in which it acts, but grounded his defence of the operative measure upon the results obtained. He proposed to operate in this manner when all other means had failed, and the patients insisted upon relief at any cost. He himself had tied the carotid artery, under these circumstances, thirteen times, and had never noticed any of the symptoms mentioned as often occurring, such as cerebral congestion, vertigo,

double vision, etc.' Dr. Trousseau speaks very favourably of division of the temporal and of the occipital arteries, with the view of curing obstinate neuralgias of the head. The following are his own words :

CASE VIII.—CHRONIC FACIAL, NEURALGIA CURED BY CUTTING THROUGH THE TEMPORAL ARTERY.

'I tried it for the first time in 1833, in the case of a lady, about 30 years of age, who had been for more than ten years afflicted with temporo-facial and cranial neuralgia of excessive violence. I had tried no end of remedies, and, as a last resource, I determined on dividing the temporal artery above the zygomatic arch. I wrapped the blade of a bistouri in a piece of sticking-plaster, leaving only the third of an inch uncovered, and holding the instrument like a pen, I pushed it through the tissues quite close to the ear perpendicularly, and, on reaching the bone, I went on cutting until there was a gush of arterial blood. The neuralgia ceased as soon as the section was made.'*

Irritant External Applications — Under this heading we find many agents included which are of use in allaying neuralgic pains, and assist frequently in arresting pain until the administration of drugs has produced a decided constitutional effect.

Blisters are often of great use, and particularly what are called flying blisters. I have certainly cured many severe neuralgias by this means, but my invariable practice is to raise a good bleb, then to carefully cut away the raised cuticle, dry the raw surface with a piece of lint, and apply to it one grain of muriate of morphia, rubbed up with half a dram of spermaceti ointment. By this means I have succeeded in curing neuralgias of rheumatic origin with astonishing rapidity.

Liniments of croton oil, iodine, chloroform, oil of amber, oil of peppermint, ammonia, camphor and chloral, aconite, aconitine, veratrine, atropine, mustard, moxas, the actual cautery, electro puncture and the electric brush are remedies which find favour with most practitioners, and they will each be referred to again in

* Trousseau, 'Clinical Medicine,' vol. i. p. 509.

speaking of special neuralgias. Dr. Chapman speaks very highly of the value of hot and cold applications to the spine, in order to modify its temperature in the treatment of neuralgia.*

Chloral Hydrate.—I believe that I was the first physician in this country to bring prominently before the profession the value of hydrate of chloral, when applied externally for the relief of pain; and if properly and carefully applied after the manner which I direct, its value cannot be over-estimated; and, strange to say, many cases of severe nerve-pain which the hydrate of chloral failed to relieve, when given internally, soon subsided when this drug was applied externally. The strength of the solution is usually 1 oz. of the chloral hydrate to 16 oz. of water. My mode of applying it (a great deal, of course, depending upon the surface over which it has to be applied), is as follows:

Take three layers of lint, which must be fully saturated with the solution of the hydrate of chloral previously made hot: Place these immediately upon the painful part, and upon them place three or four folds of flannel, which has been previously soaked in very hot water and rung out; and then upon the whole place a piece of india-rubber sheeting. It is necessary to bind these firmly to the part affected, and they may remain in position for six or eight hours. When they are removed, the part ought to be painted with collodion or dusted with starch, and then covered with cotton wool.

CASE IX.—INTENSE NEURALGIA OF THE HEAD FROM CANCER OF THE SCALP, GREATLY RELIEVED BY THE OUTWARD APPLICATION OF THE HYDRATE OF CHLORAL.

'C. H., was aged 67, and suffering from a large cancerous mass which formed a complete crown on the top of the head. The pain, according to her description, was burning and agonising. The stench, a few hours after it was dressed with permanganate of potash solution, was almost unbearable. The administration of chloral internally and morphia by hypodermic injection had been used until they were found to be of little value to relieve the pain. I then had the head dressed three times a day

* Medical Society of London Report, Jan. 15th, 1872.

with the solution of chloral, and the result was most gratifying. She said that she had not been so free from pain for twelve months.'

The antiseptic properties of the chloral kept the parts almost free from any offensive smell. We shall again refer to the value of this agent, and give cases when writing of special neuralgias.

Morphia and Opium.—There is no remedy which has stood the test of time for the relief of pain like morphia, and one might almost say that there is no remedy of equal power for the relief of neuralgia. It certainly holds the chief place in the narcotic world, like chloroform does in the world of anæsthetics. There are many persons who have altogether a mistaken idea of the value of opium and morphia, not only for the relief of pain, but for the wonderful powers possessed by these drugs in promoting nutrition of the nerves and nervous centres. It is by the sleep and calmative influence of opium upon the nerves and ganglia that the irritability of the nervous system and its deranged action are quieted, refreshed, and reinvigorated. It undoubtedly checks glandular secretion, but this is of secondary importance, and can easily be corrected. From my experience concerning the administration of morphia I have come to this conclusion, namely, that its action differs materially from that of opium. When I administer morphia internally, it is with the object of inducing profound sleep, and I give the largest dose which I think my patient can bear ($\frac{1}{2}$ gr. to 1 gr.). On the other hand, in giving opium I prefer the watery extract ($\frac{1}{2}$ gr. for a dose), which I order to be taken in the form of pills, one every two, three, or four hours. The action of the two drugs is dissimilar. The first effect of the morphia is marvellous. A few minutes are sometimes sufficient to calm the most agonising pain, but the pain unfortunately generally returns as the effect of the narcotic wears off. With opium given in small doses at intervals, we have a soothing power induced, which, as I have just stated, is so essential to produce rest and to allay irritability. I well remember a very marked case, and that of a gentleman who came under my care in the month of February, 1879, after he had sought relief in many renowned quarters :

CASE X.—NEURALGIA OF THE ARM AFTER AN INJURY,
CURED BY OPIUM.

'T. B. was a man of spare habit of body, and accustomed to out-of-door exercise. It was four months or more previously to his coming under my care that he fell from his horse and alighted upon his shoulder. There was neither fracture nor dislocation, and for some days the pain was confined to the shoulder-joint. As the swelling subsided and power of movement increased, he tried to fasten his shirt-collar at the back of the neck. At the same instant he felt an awful pain run down the inside of the arm. After this his neuralgic troubles continued, and, as he said to me, they were simply killing him. The slightest movement of the arm would at times nearly drive him mad. After carefully examining the limb, I could detect no defect from the injury, and the deltoid and other muscles had not undergone atrophy. He remarked that he had tried more than twenty prescriptions, and that none of the medicines *touched* his complaint at all, but that injections of morphia relieved him more than anything else for the time. For months he had not had a quiet or refreshing sleep, and said that he was becoming more nervous every day, and unless something was done he should certainly go out of his mind. His wife, who accompanied him, said she was of the same opinion. His tongue was coated, saliva acid, skin moist and acting much too freely, and the bowels were regular. I at once placed him under the influence of opium (half a grain of the extract every hour, twelve doses). The effect was simply magical. He had some hours of refreshing sleep during the night, with only comparatively slight pain. He continued to take six grains of the extract of opium daily for a fortnight (no other medicine), and at the end of that time he was quite free from pain, the tongue was clean, the appetite good, and he was, in fact, to use his own words, "a different being."

Where there is great prostration, bodily and mentally, accompanying neuralgia, there is no remedy in my experience of greater value than opium carefully, yet persistently, administered. 'Anstie says that morphia is particularly useful in glaucomatous neuralgia and in neuralgia of the pelvis.'

Hypodermic injection of morphia is of great value in relieving

pain, but it does not cure. I have known injections of morphia given for weeks, and even months, without effecting a cure, and also that patients, after the neuralgia has been cured, have not unfrequently persisted in using the morphia injections *to soothe them*. I make it a rule never to continue injections of morphia for more than ten or twelve days, and if the neuralgia is not cured in this time, I seek some other remedy. I usually commence with a quarter of a grain, using a syringe with a long nozzle (an inch and a half), which I insert freely and deeply into the muscle. I use often a mixture of morphia and atropine with great advantage where there is muscular wasting and want of normal temperature in the neuralgic part, as well as the body generally (morphia, $\frac{1}{4}$ gr., atropine, $\frac{1}{80}$ gr.). Atropine can be injected in doses that could not well be administered through the mouth without serious discomfort.

Aconitine.—This drug, according to M. Gubler, is a specific for neuralgia of the face, and as I have not tried it largely myself, I will give M. Gubler's experience of this remedy.* He says: 'I do not know a neuralgia of the fifth pair of nerves which has resisted aconitine.' M. Gubler saw, some years ago, the following case:

CASE XI.—FACIAL NEURALGIA, CURED BY ACONITINE.

A patient suffered for a long time with trifacial neuralgia, for which Nelaton had performed resection of all the nervous filaments. But this had only given him temporary relief, and he was given the aconitine of Hottot, and thereby the pain was absolutely suppressed. Half a milligramme ($\frac{1}{14}$ gr.) may be given, but the dose may be, if necessary, increased progressively to six milligrammes ($\frac{1}{11}$ gr.) before any decided good effect is appreciated.

Gelsemium-Sempervirens (Yellow Jasmine).—I have used this drug very extensively, and there can be no doubt that it has a very definite and specific action upon neuralgias of the face. Some persons are more prone to its action than others, so that the dose has to be modified to suit the individual. I have pushed the dose to such an extent, that the patient has been devoid of all volun-

* 'Paris Medical,' Feb. 15th, 1877.

tary power, yet neither consciousness, respiration, circulation, nor temperature have been interfered with. Patients, when under the influence of this drug, have a decidedly sleepy look, and the jaws feel so stiff that they cannot masticate their food.* Its specific action seems to be exerted upon the dental branches of the maxillary nerves.

CASE XII.—NEURALGIA, CURED BY GELSEMINUM-SEMPERVIRENS.

‘A lady, of some 40 years of age, pale, and weakly, consulted me for pains of a grinding and wearing character, from which she had been suffering for some time. The pains were confined almost entirely to the teeth and jaws. She had taken aconite, quinine, and other remedies, with no effect. One dram of the tincture of gelseminum relieved the pain in ten minutes.’

I certainly do not know of any other remedy which acts so promptly in relieving those neuralgias, which are commonly called toothaches and face-aches. There are some practitioners who state that 15 drops is a full dose, but I never give less than 20 or 30 drops of the tincture, and repeat the dose every hour until the pain is relieved. It must be understood that the effect of this drug, in painful nervous affections, is not confined to the trifacial nerve, although its action upon this nerve is certainly specific. I have found it of value in intercostal and mammary neuralgias, and other superficial cutaneous neuralgias of no great severity. In the lightning pains of loco-motor ataxy it is of value, but the dose must be increased by degrees.

Belladonna—Atropine.—This drug and its alkaloid cannot well be omitted from the list of remedies for neuralgia. In my practice I have found them to be valuable, particularly in neuralgias associated with rheumatism and malaria, especially when in combination with full doses of quinine. In what is usually termed brow-ague, I have applied the following mixture to the part with signally beneficial results: ℞. Morphine, gr. iv., atropine, gr. ij., aconitine, gr. j., sp. vini, ℥ij., glycerine ad. ℥iv. The painful part is to be smeared

* See paper by the author, *Medical Press and Circular*, 1876.

with this mixture by means of a camel's hair-pencil until relief is obtained. M. Trousseau speaks highly of the value of atropine. He says : 'A solution of atropia (gr. iij. to ℥iv. of proof spirit) applied locally, is pretty successful in neuralgia of the head and of the superficial cervical plexus, but is not so useful in intercostal and brachial neuralgia, and loses all efficacy in neuralgia of the lumbar plexus, of the sciatic nerve and of the abdominal viscera.'* I cannot agree with this learned physician that neuralgias of the abdominal viscera are not benefited by belladonna. On the contrary, in some cases, when administered internally, belladonna acts most beneficially.

Veratrine.—This alkaloid does good in some cases, when applied to the cutaneous expansion of the nerve, but it is far more efficacious when in association with aconitine. For instance, I have been in the habit of using a plaster made up with these alkaloids (veratrine, gr. xij., aconitine, gr. j., dissolved in spirit and spread over a square-foot surface of emplastrum resinæ), and have found that a piece the size of half-a-crown, or even a shilling, when applied to the painful part, produces great tingling, and relieves the pain in a very short time.

Ergotine.—There are many physicians who believe in the specific action of this drug in neuralgia. The action of ergotine upon the blood-vessels, in producing their contraction, is a fully recognised fact, of which we frequently take advantage in congestions, or even hæmorrhages, of either the brain or spinal cord. In some neuralgias of the extremities, and in one-sided headache and migraine, where there is a sub-acute neuritis, I have been very well satisfied with the results. Half a grain of ergotine, dissolved in a little glycerine and water, may be injected deeply into the flesh at one time ; it produces a burning pain, which, however, soon passes off. Dr. S. S. Marino speaks very highly of its value. He says : 'In sunstroke and tic doloieux, local hypodermic injections of ergotine have rapid and certain effects, superior to those obtained by all other remedies, quinine included.'†

* 'Clinical Medicine,' New Sydenham Society, 1867, p. 496.

† *Gazette Clinica di Palermo*, June, 1876.

Strychnine.—The value of this very important remedy cannot be too greatly extolled; its power in promoting nutrition by determining an influx of blood to the nervous centres, and also by improving the quality of blood and by ensuring its more perfect oxidation through its influence upon the respiratory centres, are conclusive proofs of the great good it is capable of effecting in those neuralgias which are associated with debility and anæmia. Its combination with iron, quinine, and phosphoric acid is a mixture whose properties are well known, and certainly, in the neuralgias connected with chlorosis and due to degenerative blood changes, it forms an invaluable tonic. Strychnine in my practice, *in full doses*, administered either by the mouth or by hypodermic injection, has frequently brought about changes in nerves when other remedies have failed. Dr. Hughlings Jackson noted the following interesting case :

CASE XIII.—NEURALGIA OF THE FACE, GREATLY RELIEVED BY STRYCHNINE.

‘A woman, aged 60, who had suffered for nearly three years from persistent facial neuralgia, obtained marked relief by strychnine, after the failure of phosphorus, chloral, gelsemium and valerian. She had some time before suffered from neuralgia, and then she was cured by strychnine. It may be noted that the patient had been subject to sick headache in early life, and had had rheumatic fever. Anstie has pointed out that many patients subject to sick headache (migraine) may, later in life, have facial neuralgia.’*

Quinine.—This drug, the value of which is so well known, needs little to be said about it. In doses varying from 3 to 5 grs. its specific action, in rheumatic and malarial neuralgias, is most marked. There are some physicians who say that its action upon painful nerves is more certain when it is hypodermically injected, but I cannot recommend the adoption of this method of administration, as I have never seen any especially good effects from its use in this way. The late Sir Benjamin Brodie, in his lectures, always spoke highly of the value of quinine in painful

* ‘Clinique London Hospital,’ *British Medical Journal*, Jan. 13th, 1877.

nervous affections, when the *pain came on periodically*, and he gave the following amongst other cases :

CASE XIV.—SPINAL NEURALGIA, CURED BY QUININE IN LARGE DOSES.

‘A respectable medical practitioner consulted me, believing that he laboured under disease of the spine. He complained of pain, which he referred to the inferior dorsal vertebræ, and which was so severe that he could, as he said, scarcely endure it. On inquiry, I learnt that the pain attacked him always at a particular period of the night, that it lasted for a certain number of hours, and that he was free from pain, or nearly so, in the intervals. I recommended that he should take the sulphate of quinine procured at Apothecaries’ Hall. He took as much as 15 or 16 gr. daily, without any decided amendment, but I was so satisfied of the efficacy of the remedy in such a case, that I advised him to increase the dose still further. At last he took half a dram of the sulphate of quinine daily, and this effected his cure.’*

Sir Benjamin Brodie gives many other cases, of a somewhat like kind to this, to illustrate the value of quinine, in increasing doses, for *periodical neuralgia*.

Phosphorus.—The value of this drug, in all forms of nervous debility, has been recognised for many years, but to Mr. Ashburton Thompson is due the credit of having brought it more prominently before the profession; and wonderful powers are ascribed to its influence. I must admit, however—and I have used the æthereal preparation of this drug very largely—that I have not been able to appreciate the high eulogiums which many have so liberally bestowed upon it. In the practice of some, death has been said to have been averted by its use, even when the patient has been *in extremis*. A physician of great experience told me of a case of that kind to which he was recently called in consultation. I have no wish whatever to undervalue the experience of others, or the efficacy of phosphorus, and when I admit that I have failed to realise its many virtues, I make this statement, not hastily, but on the grounds of a large experience

*. Brodie, ‘Local Nervous Affections,’ 1837, p. 28.

and of careful observation. In some of my neuralgic cases, however, it has produced very satisfactory results indeed, and especially in those cases where the blood has become impoverished from some debilitating cause. Dr. Bradbury, of Cambridge, gives two very interesting cases, showing the efficacy of phosphorus.

CASE XV.—NEURALGIA OF THE FACE, CURED BY PHOSPHORUS.

'The first was that of a shopwoman, aged 24. She was very anæmic, had suffered from neuralgia of the face for three months, and had been taking the sulphates of quinine, iron and magnesia thrice daily, without any good effect whatever. She was then ordered a phosphorus capsule ($\frac{1}{30}$ gr. of phosphorus), to be taken twice daily. After taking two capsules, the pain entirely ceased. The second case was very similar to the first, where quinine and arsenic failed, and phosphorus effected a cure.' *

This drug will again be referred to, when we treat of special neuralgias.

Croton Chloral—has not become so popular a remedy to relieve pain, or to produce sleep, as it was at one time expected. Its effects are most uncertain. I think it quite probable that in some cases, where its full influence has not been realised, it has not been pure. I am quite sure, with respect to this drug and the *chloral hydrate*, it is most important that they should be obtained from the most reliable sources. They are both of the utmost value, and the outcry which has been raised against their administration, and the deteriorating action which they exercise upon the blood, although undoubtedly true, ought not to prevent the use of them, when we deem such necessary to relieve pain. Dr. Liebreich, the discoverer of croton chloral, thinks that 60 gr. may be given for a dose to procure sleep. I have many times given it in doses of 20 gr. for this purpose, in severe cases of neuralgia, but more frequently a much smaller dose will suffice. In a case of severe trifacial neuralgia, which I certainly thought

* *British Medical Journal*, March 14th, 1874, p. 344.

was of malarious origin, but which would not yield to quinine or any other remedy, I administered 1 gr. of croton chloral every five minutes; after eight doses the neuralgia passed off, but the croton chloral was continued to 15 gr., when the patient passed into a profound sleep, and the neuralgia was for some time cured. There are physicians who recommend the admixture of croton chloral with the hydrate of chloral, but I have never found this admixture to possess any decided advantages. In one case of persistent tic doloreux, in an elderly lady, I found that after the administration of half a dram of the hydrate of chloral very little relief from pain was produced. But the most happy results were obtained by supplementing the hydrate of chloral with 3 gr. of the croton chloral, which was given in about a quarter of an hour after the chloral hydrate had been given. Whilst speaking of the admixture of croton chloral with chloral hydrate, I would refer to the great advantages which, I consider, are derived from associating the hydrate of chloral with morphia in severe cases of neuralgia. I usually order a full dose of the former (40 gr.), with $\frac{1}{4}$ gr. of the latter, and I must say that I have relieved pain and procured sleep by this means, when other remedies have frequently failed.

Salicylic Acid and the Salicylates—to which we shall again refer, are often valuables in neuralgia especially, when the neuralgia is of an essentially rheumatic origin; 15 gr. may be given every three or four hours, with 15 or 20 drops of the tincture of gelseminum, in a little camphor mixture. But the depressing action of these drugs must not be forgotten.

Chloride of Ammonium—is of far greater value in some cases of chronic neuralgia than is, I think, usually admitted. It must be given in full doses (40 gr.) with 1 gr. of the extract of belladonna, 10 gr. of rhubarb, and half a dram of bicarbonate of soda, in strong peppermint water. I have often found a draught of this kind, repeated two or three times daily, to do good service in facial, lumbar, and abdominal neuralgias, especially when of catarrhal, rheumatic, or gouty origin. I remember one case in particular, that of a gentleman over sixty years of age,

who suffered intensely from lumbar neuralgia whenever the wind, at the spring or fall of the year, veered round to the south-east. The bromides and iodides of potass did him little good, but the above draught had always a wonderfully curative influence.

Iodide of Potassium—is, of all the curative remedies, next to quinine, of the greatest value in neuralgia. When we have a clear history of gout or syphilis, then it is that the charming effects of this drug are to be realised. I am usually guided in its administration by two principal signs, viz., first, when there is marked tenderness upon pressure over the neuralgic area, either after or continuously between the attacks of neuralgia; secondly, when the neuralgia is increased or brought on by warmth. These, however, are certainly not the only signs to guide us in its administration. We often find it of use in neuralgia of the cranial nerves, and particularly so in periodic neuralgia and persistent headaches, but its use has to be persisted in for some time before we can hope to realise its full advantages. The late Dr. Brinton used to consider it an invaluable remedy in neuralgic affections of the stomach. In these forms of neuralgia, as well as those of the abdominal viscera and rectum, I have found it of the utmost service over and over again. It is a remedy I must admit that cannot always be tolerated, and for this reason, in my experience, it seems to be, in some instances, the more beneficial. Iodism, no less than mercurialism, possesses a stimulant and revulsive action upon the nervous system which is frequently useful in the curative treatment of neuralgias, and especially in those which are due to, or in association with, depression of the sympathetic nervous system. The dose must always vary very considerably, according to circumstances and to age. I have given as much as four drams in the four-and-twenty hours, before any absolutely good effects have been realised.

Bromide of Potassium.—The great value of this drug is due to its specific power in arresting abnormal reflex actions and irritability of certain centres of the nervous system, and on account of the influence which it undoubtedly has in controlling vascular spasm, and thereby aiding nutrition. In many of the ordinary

forms of neuralgia this drug is of little use, even in one dram doses, but in the neuralgias associated with epilepsy (not what Trousseau calls epileptiform neuralgia) its good effect is often apparent after one or two doses. In cases such as these I give a mixture of the bromide and iodide of potassium in the proportions of half a dram of the former to 10 gr. of the latter for a dose. The mixture of the iodide of potassium with the bromide has been, in my practice, so frequently effective, when neither the one nor the other given alone has been of any value, that I cannot too highly recommend its use to those who have not given it a trial.

Turpentine (Rectified Spirit of).—Long before the many recently introduced preparations were thought of, which now so justly hold a prominent position for the relief of pain, turpentine was found to be a very efficient drug in the treatment of neuralgia. I have certainly been much pleased with the good results which I have obtained by its use in some forms of intractable neuralgia especially affecting the nerves of the gastric and lumbar plexuses. I have so often witnessed the good effects of turpentine, where there has been marked depression and inactivity of the sympathetic, as well as the cerebro-spinal nervous systems, that I can quite understand why it should be of service also in neuralgias. But turpentine has to be administered cautiously, for in some cases it will produce constriction, and in other cases dilatation, of the small capillary vessels of the circulation. It must be given either in doses of 5 to 10 drops (capsules), or in a full dose of half an ounce. Trousseau speaks highly of the value of turpentine in neuralgia of the stomach.* He says: 'It is a fact, however (and I shall not attempt to explain it), that gastric neuralgia is, in general, more easily and more surely cured by turpentine than other neuralgias.' My experience does not again quite coincide with that of this learned physician upon this point, for I have found injections of turpentine with mucilage and castor-oil, not sent farther than the rectum, and there to be retained for some ten minutes, of first-rate value in ovarian, uterine, sciatic and crural

* Trousseau, 'Clinical Medicine,' vol. i., New Sydenham Society, 1867.

neuralgias. The injection which I use is composed of half-ounce of turpentine, one ounce of castor-oil, and eight or ten ounces of slightly warm mucilage (my preference) or gruel. The bowel should always be induced to act, if the injection be retained for more than ten minutes. A pint or more of warm soap and water will be sufficient to ensure this taking place. Turpentine should always be given as soon after a meal as possible. *It should never be given upon an empty stomach.*

Indian Hemp.—The extract of this plant, in $\frac{1}{2}$ gr. doses, with 2 grs. of quinine, is often of use in obscure neuralgias of the abdomen. I have heard many good practitioners complain that this drug is of little or no value. I would advise them to be extremely careful from what chemist they obtain the preparation, for, if kept too long, or improperly prepared, it is certainly of no value whatever.

Chloroform or Æther—may be inhaled with advantage. It is never required to render the patient completely unconscious, and nothing can possibly be gained by doing so. A few drops (20 or 30), sprinkled upon a pocket-handkerchief, deeply inhaled, have sometimes a beneficial influence. I have frequently used these as helps or remedies at times, when I have been driven to my wits' end to know what to do. In a severe and chronic case of tic dolooureux, in a lady over 60 years of age, I have caused æther to be inhaled, and, in five times out of six, the attack subsided. Of the two I prefer æther, and I cannot say for why, but because I think that, in my experience, it has acted more decidedly than chloroform. They who have had experience in the treatment of neuralgias will have learned how fruitless have been their remedies for the relief of pain, and glad have they been to give their patients some, though perhaps temporary, comfort by the use of anæsthetics. Chloroform, like turpentine, is often most valuable when administered internally, in neuralgia of the stomach. A relative of mine, who suffers severely from liver and stomach neuralgia, as well as neuralgia of the face, is relieved by no drug so quickly as by dram doses of spirit of chloroform, with rhubarb mixture.

Nitrite of Amyl—may be tried. I have found it utterly useless in the majority of cases in which I have used it. I remember, however, one case of trifacial neuralgia, in a very pale girl of 19, where it certainly did a great deal of good, and almost immediately after its first inhalation. There can be little doubt that this drug causes paralysis of certain vaso-motor centres, and possibly on this account, in neuralgias of the trifacial in anæmic women, it may be worth a trial. In angina pectoris it is of considerable value, and its inhalation not unfrequently affords speedy relief. It is put up in little small glass capsules by Messrs. Allen and Hanbury, which are very convenient for the practitioner's use.

Iron.—The preparations of this metal are of unquestionable value in the neuralgias of chlorotic and anæmic women. The late Dr. Anstie, who wrote so voluminously and with so much practical truth concerning neuralgia, considered that of all preparations the tincture of the perchloride of iron was the most efficacious. I must say that I prefer the more recently introduced preparation of dialyzed iron. The *iodide of iron* is one of the most pernicious compounds which was ever introduced into the pharmacopœia, and the hypophosphites of iron have been very greatly over-estimated. In anæmic and chlorotic neuralgias, I still adhere to the old-fashioned treatment, namely, the mixture in equal parts of the compound decoction of aloes and the compound iron mixture, two tablespoonfuls to be taken three or four times a day. There is nothing, in my experience, which has ever answered better. In some chronic neuralgias associated with anæmia, the sesqui-oxide of iron,* in dram doses, should not be forgotten.

Zinc.—The preparations of this metal have been long held in just reputation in neuralgia for the tonic action they exercise upon the nervous system. We have the valerianate, the phosphide, the oxide, and the sulphate; and of these I prefer the latter, which must be given in rapidly increasing doses, from 5 gr. up to 20 gr. I consider that the value of the valerianates, both of zinc and iron, has been over-estimated. The cases in which

* 'Practice of Physic,' Watson, vol. i. p. 754.

zinc will be found to be of most value are those of neuralgias in the choreic and rheumatic diathesis, and in the neuralgias of premonitory phthisis, such as sternal and intercostal neuralgias.

Mercury—is most valuable for specific affections of the nerves, or of the bony channels through which the nerves travel, or of the openings through which they emerge from the skull. It depends entirely upon the nature of the case and the constitutional condition of the patient as to what preparation of mercury should be used. If the patient is tolerably robust, it will be well to bring him, as soon as possible, under the influence of the drug, and especially if other remedies have been tried in vain. I usually prescribe $\frac{1}{2}$ gr. of opium, and $\frac{1}{2}$ gr. of calomel, in the form of pills, to be taken every two hours. When ptyalism has set in they must be discontinued, and the mouth washed out frequently with solution of chlorate of potash. After this I commence with full doses (5 gr.) of quinine, three or four times a day, until the mouth is well. A cure will usually be effected by small doses (continued over a few weeks) of the iodide of potassium and bichloride of mercury. Specific neuralgias, under this treatment, simply vanish.

Sulphur.—The late Dr. Fuller used to say that in rheumatic sciatica, unattended with fever, there was no application more serviceable than sulphur. The affected limb was to be swathed in flannel, upon which precipitated sulphur had been thickly sprinkled, and over the flannel was to be placed a covering of oiled silk or of thin gutta-percha, and the flannel bandages to be thus kept night and day. With one patient I acted somewhat upon this suggestion of Dr. Fuller, and with a completely curative effect.

CASE XVI.—SCIATICA, CURED BY SULPHUR.

'A man, well-to-do, was seized with pain in the hip-joint and extending down the limb. He was of a fair and strictly rheumatic diathesis, and was for some months kept in a recumbent posture, by a hospital surgeon, for disease of the hip-joint; still the pain continued. He came under my care, and then blistering and hypodermic injections of morphia were tried, but with no permanently good effect. He became somewhat impatient, and resolved to go into the country for a week. At this time he walked

with difficulty and by the aid of a stick. I told him to cover, whilst he was away, the inside of his boot with sulphur. At the end of a week he returned free from pain and walked quite well.

Arsenic.—There are two preparations of arsenic known to be of value in some chronic and sub-acute neuralgias: perhaps the arseniate of soda may also be included; but arsenic is especially useful in one-sided headache (hemicrania), migraine, or megrim. Sir Thomas Watson says, 'Arsenic is considered by many to have a specific power over this kind of malarial neuralgic headache.' Again, 'I believe that 4 or 6 drops of the liquor arsenicalis, given three or four times a day, with due attention to the state of the bowels, will be almost sure to remove hemicrania in nine cases out of ten in which it occurs.'*

External applications will be considered more fully under the heading of special neuralgias.

* 'Practice of Physic,' p. 755.

ORDINARY NEURALGIAS;

OR,

Neuralgias of Individual Nerves or Groups of Nerves.

Neuralgias of the Face, 'Tic Dolooureux,' Facial Pain (Neuralgia of the Fifth Nerve—Trigeminal Neuralgia).—Of all the various forms of neuralgia, there are none so frequently met with as neuralgia of the fifth nerve. It is of daily occurrence in some shape or other. It is usually limited to one side of the face, although occasionally, but rarely, it may affect both sides. When we consider the wide distribution of the fifth nerve, and its connection with other nerves of the brain and spinal cord, we can easily understand how, from its great sensitiveness, its branches should become the seat of such agonising pain; and, again, when we consider the exposure of the minute branches of this nerve as they traverse the skin of the face, and the differences of temperature to which those divisions of the nerve are subjected, which give sensation to the cheeks, and to the teeth during eating and drinking, and, when we likewise bear in mind the connections of this nerve with the nerves of the throat and the nerves of the arm, we cannot wonder at the frequency of these neuralgias. In a somewhat general little work of this kind, I do not, from an anatomical and pathological point of view, profess to do justice to this subject.

The chief causes of this neuralgia are hereditary tendency to neuralgia, and nervous hereditary tendency in general. In many of the most severe cases of neuralgia of the face which have come

under my observation, there has been a decided family history of intemperance, or of epilepsy, or even of insanity. Now, it is frequently a most difficult matter for the physician to obtain from his patients accurate information upon these points. Yet they are of the greatest importance in reference to curative treatment. The moral treatment of a neuralgia is, in many cases, quite as important as the physical ; but the two are required to work hand in hand in order to effect a cure. Facial neuralgia is often experienced, for the first time, by women at the change of life, and, like all other neuralgias, it bears a marked relationship to the period of sexual activity. *Sexual excesses, undue excitation, over-stimulation, as heretofore noticed, degeneration of tissue, and atmospheric changes, must be considered as the most important agencies which tend to develop it.* The worst forms of this neuralgia come on in advanced age. Amongst other causes of this form of neuralgia we have *malarial influences*, which seem almost invariably to affect the brow (*ramus supra orbitalis*), and cause what is commonly called *brow ague*. It is common enough in agueish districts, and, like ague, is periodic ; it comes on, with the same regularity as ague, every second or third day, and, like ague, it is readily cured by full doses of quinine. *Catching cold*, wearing thin shoes, getting damp feet, exposure to draughts or currents of cold air are common causes. I need scarcely say how very susceptible to draughts, and to changes of air, are so-called nervous people. Their mucous membranes are extremely delicate and liable to congestion, and so are their skins in like manner. They readily catch cold (not serious colds), and immediately become over-sensitive, and then the ordinary interchanges of volumes of air, which are constantly taking place in even the best-ventilated rooms, are, to these sensitive beings, like streams of ice upon the susceptible surface of their delicate nervous organisations.

A gentleman who was for some years a patient of mine, and who for nearly all his life had enjoyed the most excellent health, became paralysed down the right side of the body, and so extremely susceptible was he to the least atmospheric change, that draughts of air, caused him the most

agonising pain in the right half of the face, and the pain was only relieved by a full injection of morphia. There can be little doubt that a large proportion of the neuralgias of the face is due to disease of bone, and especially to inflammatory thickenings of the small bony channels through which the trunks and various nerve-branches ramify. The most common example of this truth, and the most curable, but by no means the least painful, is the decayed tooth. *Aneurisms* of the vessels, which ramify in the course of this nerve, have been known to give rise to the most incurable forms of facial neuralgia. *Tumours of the brain* do not, as a rule, give rise to neuralgia of this nerve ; but tumours of the membranes which cover the brain (the *dura mater*) frequently give rise to the most intense neuralgia of the face, head, and neck, but more especially of the latter. One of my hospital patients, with a tumour on the outermost covering of the anterior lobe of the brain (the *dura mater*), suffered from the most intense neuralgia of the left side of the head, the brow, the face, the neck, and the arm. Neuralgias of the face can and do arise from some distant forms of irritation, and it may even be from the stomach, the intestines, the womb, or the ovary. We have before referred to the neuralgic paroxysm ; this sometimes is preceded by a distinct warning, as we find frequently to be the case in epilepsy. In a patient now under my care, in whom the neuralgic and the epileptic seizures alternate, the warning is in the thumb and little finger and is the same in each case. So exceedingly sensitive are neuralgic patients to certain external influences which will bring on an attack of neuralgia, that they are in constant dread and expectation of such an event arising, and hence of necessity, in addition to the severe pain, the life of a neuralgic patient becomes almost unendurable. The patient is frequently fearful of performing the most simple and ordinary actions of life, lest they may bring on a paroxysm. The mind becomes so much weakened, that the least excitement, even loud noises, or sudden news, will hasten an attack. Violent muscular exertion, especially if it is sudden, such as coughing, sneezing, etc., will have the same effect. A patient of mine always gets an attack of neuralgia whenever she sees a certain

individual for whom she has the greatest dislike. The same patient, according to her state of health, and the season of the year, as well as the quarter from which the wind blows, finds that the attack of neuralgia varies in intensity and in location. Another patient of mine, who may be seen doubled up with neuralgia of the stomach, will scarcely have time to say, 'Thank God, it is gone !' before she will be seen with her hands pressing her face, and the tears streaming from her eyes, and mucus coming from the nose and saliva from the mouth, through neuralgia of the face ; and then, in her intense agony of suffering and despair, she will rub the skin of the face until she makes it raw. I know of scarcely anything more distressing to witness than a person during the agonising paroxysm of a neuralgia ; the muscular contortions, the restless bodily movements, the wild, frantic and fiend-like look of despair, changing, as the pain wears off, to a look of vague astonishment, and mixed up with an expression of doubt, uncertainty and dread, can only be depicted by the pen of a Dante or the pencil of a Doré. In some cases of severe neuralgia which I have had under my care, I have been compelled to keep the patients under the influence of narcotics and chloroform, in order to control their mental disquietude, and to relieve in a measure their minds from the awful dread and anxiety with which they are oppressed, and in order to prevent their doing themselves bodily harm.

Neuralgias of the face and head will now be considered in a practical way. Could we follow minutely the anatomical distribution of the fifth nerve and its numerous branches and ramifications, we might perhaps, in theory, define the especial neuralgias of the different parts of this nerve ; but in practice (at all events, speaking from my own experience) we are not able to do so with accuracy and precision, except in some rare instances. The fifth nerve supplies with sensibility the forehead, the temples, the brows, eyelids, eyes, nose, chin, cheeks, lips, jaws, part of the tongue and the teeth. This nerve is divided into three branches ; we will just consider briefly each of these divisions.

Neuralgia of the Face, Teeth, and Jaws.

Neuralgia of the first division of the fifth nerve includes pain in the forehead, the temples, the eyelids, the eyes.

Neuralgia of the second division of the fifth nerve includes pain in the cheeks, the eyelids, the sides of the nose and the upper row of teeth. These parts are the most frequent seats of the severe neuralgias and of tic doloreux.

Neuralgia of the third division of the fifth nerve includes pain in the lower jaw, the lower row of teeth, the mucous membrane of the mouth, the tongue, the cheeks, the temples and part of the ears.

Neuralgia of the Face (First Division of the Fifth Nerve) gives rise to severe pain over the forehead, to the top of the head, and to the temples and the upper eyelid. Even the *eye* itself may become the seat of very severe neuralgic pain. The eye generally in this form of neuralgia becomes bloodshot, and there is a constant overflow of tears, and light thrown upon this eye cannot be, as a rule, tolerated, and the whole of these parts becomes excessively tender to the touch; but the focus of pain is, of course, where the nerve issues from the skull just over the orbit. This form of neuralgia is either due to cold or malaria, is never very persistent, and yields to quinine. Although in the neuralgias of this part we find that quinine is, as a rule, a specific, yet there are some cases in which its administration is either valueless, or possibly attended by an aggravation of the symptoms. When such is the case, we must have recourse to iodide of potassium in 10 gr. doses, with 3 drops of Fowler's solution of arsenic. The solution of atropia (atropia, 2 gr., proof spirit, 3 ss.), lightly applied with the finger, will often be found a valuable remedy to relieve the pain in the temples and forehead.

CASE XVII.—NEURALGIA OF THE BROW, FROM NERVOUS EXHAUSTION, CURED BY QUININE, OPIUM AND DIET.

'A gentleman, about 35 years of age, consulted me in October, 1878, for this kind of neuralgia. He was a member of the Bar, and had been working very hard upon some important business

which he had undertaken to do, but which he feared that he should be unable to accomplish on account of the wretched state of health into which he was getting, and he said to me, "If you can only put me in any way right for another month, then I can get away to the mountains, where I shall soon get well." He told me that he was never sure when the pain would come on, or how long the paroxysms would last. He said that he had dieted himself, and taken an immense quantity of steel and quinine, sometimes with temporary, but with no permanent, advantage. He was determined not to give up the work he had in hand, let what would come. He was of fair complexion, pale, thin, highly nervous, with flying pains about the body, moist hands, usually cold feet, perspiring upon the least exercise, and his nightdress was wet when he awoke in the morning from excessive sweating; his tongue was coated, the breath was foul, and his throat was relaxed. He was quite ready to agree with my advice, that he had better sacrifice part of his work than allow the overstrain to undermine his health in the way that it was doing. But still the question was, "Will you, or can you do me any good?" I told him I would cure him of his neuralgia in less than three days, if he would pay strict attention to my advice, which he said he would do if possible. My directions were very simple, namely, to be in bed every night before twelve o'clock; not to work for more than six hours a day; to give up all wines and spirits; to drink three or four pints of Bass' very best pale ale during the day; to commence with a pint of it at eleven o'clock; and to take then also a basin of real turtle-soup; to take a dozen of oysters at two o'clock; to eat nothing but animal food lightly cooked, and no vegetables; to take brown bread or dried toast; to take no medicine excepting 1 gr. of opium and 10 gr., of quinine, in the form of pills, every night for three nights; and, lastly; to come to me of a morning so that I might apply faradic electricity to the nape of the neck. The attacks of neuralgia yielded rapidly to this method of treatment, and he soon passed a really good night, which was what he had not done for months. In the course of a week, I should not have taken him for the same man, so altered was he in every way.'

I quote this case merely to show how valuable it is, in these exhaustive neuralgias, not to adopt half measures. This gentleman had been taking quinine for five or six weeks, in small doses, with no advantage, and he had been taking port, claret and brandy almost to excess, with no benefit whatever. The first full dose of

opium and quinine with a highly nutritive diet, it may be said, acted like a charm; and certainly, if any man could express gratitude, this gentleman did so to me. In acute neuralgias, I don't care where they are, you must push a remedy to its fullest extent within twenty-four or forty-eight hours, and if it does not by that time answer its purpose, discard it at once; for, depend upon it, it never will, and we must then try another remedy. If the quinine, etc., had not answered the purpose in this case, I should have given one dram doses of the iodide of potassium every night, which I know would have cured *this form of neuralgia* if the quinine had failed.

Neuralgia of the Face (Second Division of the Fifth Nerve) may give rise to neuralgia of those parts only which the nerve directly supplies with sensation. *If this nerve alone be affected, we find pain in the eyelid, the cheek, the temple, the side of the nose, the upper lip, the upper jaw, and the upper row of teeth, and also in the cavities of the nose and in the gums.* Of all the distressing, troublesome, and obstinate forms of neuralgia which we have to treat, this is undoubtedly the worst. The pain is frequently deep-seated in the face, and many patients will say, with great truth, that the pain seems to go into their brains. We have only to consider for one moment the anatomical distribution of this large sensory nerve trunk, and its immediate connection with the largest ganglion in the body, and through this ganglion its close connection with the brain, to feel assured of the intensity of pain which it is capable of developing. I cannot for my own part scarcely see how it is possible for this especial branch of the fifth nerve to be alone affected without its involving the other two branches in a greater or less degree. Two or three cases of the kind have, however, come under my observation. There can, I think, be little doubt of this, that in all those cases of intractable neuralgias which the learned Trousseau called *epileptiform*, this division of the fifth nerve is the one essentially affected, and we shall consider it here.

Epileptiform Neuralgia.—I cannot do better than to use Trousseau's own words, so graphically, and with so much truth

does he describe this disease. This accomplished master of clinical exposition says: 'An individual, who but a moment ago was perfectly free from pain, is suddenly seized with horrible pain whilst talking. He puts his hand up to his face, and presses it with considerable force, sometimes rubbing it so much and so often, that the hairs on that side will fall off. He goes on rocking himself, holding his head between his hands, and uttering half-suppressed groans. This scene lasts for ten or fifteen seconds, one minute at the most, and all is over then without convulsions. The individual then resumes his interrupted conversation, until a fresh paroxysm sets in. This is what I mean by *simple epileptiform neuralgia*. In another case, simultaneously with the accession of pain, all the muscles of one half of the face are seen to be thrown into rapid convulsive action, and the attack, as in the preceding case, is over in about a minute. *This is convulsive epileptiform neuralgia, or tic doloieux.*'* M. Trousseau further says, after thirty-six years of practice, I have *never* known this form of neuralgia to be cured radically. It is now over thirty years ago that this most clear-sighted and practical physician of this century made this remark, and what are the changes which have taken place in treatment since then? It has always occurred to me, and no doubt the same thing has occurred to others, that M. Trousseau had the most unlimited faith in all drugs which were at his disposal, and too little reliance upon nature's own remedial processes. This first struck me in the consideration of that central nervous affection, known by the name of bulbar paralysis, which I† have shown most unequivocally to be a disease which, though M. Trousseau has, indeed, laid it down as absolutely incurable, can be put upon a retrogressive, if not an actually curable footing, by appropriate and frequently administered nourishment, so that I am not inclined to look so hopelessly upon the incurability of this form of neuralgia as M. Trousseau did, and my experience warrants my making this assertion. I will give one of several cases which I have noted.

* Trousseau's 'Clinical Medicine,' New Sydenham Society, vol. i. p. 105.

† By the Author, *British Medical Journal*, Nov. 4th, 1876.

CASE XVIII—EPILEPTIFORM NEURALGIA, CURED BY DIET AND MORPHIA INJECTIONS.

'In the year 1876, a man of nearly 50 years of age was admitted into the Central London Sick Asylum under my care, with the form of neuralgia which I have just been describing. He had lived in India for many years, and had suffered from sunstroke and fever, and in his younger days had been given to intemperance. He had held a very good position in the Civil Service, which he had lost, and his reduced circumstances and poverty had preyed upon his mind, and gave (so he thought) rise to the neuralgia. He said that he was merely a skeleton now, compared to what he once was. The neuralgia of the left side of the face came on in paroxysms, and lasted sometimes for a minute or two, or only a few seconds. It came on frequently whenever he tried to eat or drink, and the pain affected all the branches of the fifth nerve, but especially the infra-orbital branch. He would jump up, and rush from the dinner-table in the most frantic manner. In some provincial hospital where he had been, the infra-orbital branch of the superior maxillary nerve had been divided, but with only temporary benefit. He had had tooth after tooth removed, and the jaw operated upon, without any abatement of the more severe symptoms. Upon several occasions he had been awaked in the night by these seizures, and directly he was in the act of going to sleep again, they would recur with renewed violence. Now, according to his own statement, which I have no reason to doubt, he was quite sure that everything had been tried for him at the different hospitals to which he had been, and he said that ail that he wanted now was to die. As if to aggravate his misery, he had an attack of broncho-pneumonia, and, strange to say, during this illness his neuralgia almost left him, but as soon as he got well, it returned as before. I told him that I thought he would improve greatly if he took no solid food, but allowed himself to be fed often through the nostrils. He was quite willing to agree to anything that I suggested. I had a compound made of eight eggs, six ounces of brandy, three ounces of cod-liver oil, one pint of beef-tea, one pint of gruel, and two pints of milk. Half a pint of this mixture was poured into the stomach through the nostril every two hours, and 1 gr. of muriate of morphia was injected into the arm every night. After two or three days' trial he appeared anxious to give it up, as he thought it was not altogether doing him good, but I made him continue, and that, I may say, in spite of himself,

because it is so difficult to get patients to admit that they are better when suffering from these chronic maladies. At the end of a week he admitted that certainly something was doing him good, and his appearance denoted it, for he indeed looked less haggard, and was apparently less disconcerted. The attacks were much less frequent and less severe. At the end of a fortnight he had gained eight pounds in weight, and had been free from an attack for two days. From some cause or other after this he rather went back again, and the neuralgia returned somewhat severely; whether he had discontinued the feeding or not, I cannot say, for sometimes the passage of the tube would bring on an attack of neuralgia. At all events, I made him continue this treatment for nearly two months. He had not then had an attack of neuralgia for over three weeks, and he had gained seventeen pounds in weight. I must state that morphia had been injected every night, and the continuous galvanic current had been applied to the nape of the neck for ten minutes every morning. He was in the hospital for some weeks after this, and was allowed a liberal diet, and he was discharged cured. I saw nothing of him after this time, but I most probably should have done if his neuralgia had returned.'

There can be no doubt that this mode of treatment, in this form of neuralgia, is simply incomparable. *Nourishment and rest* are equally as good in neuralgia as in other affections of the nervous system, and I would particularly impress this upon the reader's attention. We frequently hear of severe *neuralgias* of the face being caused by a *diseased tooth*, and there can be little doubt that *decayed teeth* are frequently the cause of the most severe neuralgias. I have witnessed several instances of this kind. Sir Thomas Watson, in his lectures 'On the Principles and Practice of Physic,' says: 'I have myself known one instance in which agonising throes in the middle and in the lower branches of the fifth nerve on one side, were arrested at once by the process of stopping a hollow molar tooth on that side, that is, by preventing the access of air to the nervous element of the decayed grinder.'

CASE XIX.—NEURALGIA OF THE FACE, CAUSED BY AN INFLAMED NERVE AT THE FANG OF THE TOOTH, CURED BY REMOVAL AND REPLANTATION OF THE TOOTH.

‘My friend, Mr. Murray Davis, asked me, some months ago, to see a patient of his, a young lady about 17 years of age, who had suffered from intense neuralgia of the right side of the face; the teeth were perfectly sound, as far as one could see, but whenever she bit anything hard, a certain tooth gave her pain. I certainly came to the conclusion, that the tooth might be the cause of the neuralgia, and Mr. Davis, after carefully testing the teeth, found out one which gave her great pain when touched, and that tooth was removed forthwith, and there was found at the apex of the fang an inflammatory thickening, which undoubtedly had been causing the patient so much pain. The tooth-fang was denuded of its diseased portion and replanted in its socket, and it took firm root, and the neuralgia never returned.’

I think that we, as physicians, with instances like this before us, should endeavour to make ourselves sure as to what part is played by the teeth in neuralgias of the face; and yet, in how many instances have I seen tooth after tooth removed without any good resulting therefrom. Numerous instances could be brought before the reader in reference to the curative treatment of facial neuralgia. The chloride of ammonium—sal ammoniac—is much used in Germany in dram doses, well diluted with water and flavoured with licorice. It is also a favourite remedy with many of the old school in this country, in very severe face-ache. I have used it in my own practice with very great advantage, and I frequently combine in a mixture one scruple doses of sal ammoniac with 15 gr. of salicylic acid.

Neuralgia of the Face (Third Division of the Fifth Nerve).

—When this portion of the fifth nerve is neuralgic, pain is usually experienced in the jaws, the lower teeth, the lips and the chin; but it may extend throughout the whole distribution of the nerve, and then it may affect the tongue, the cheek, the temple, and the ears. The neuralgias of this branch of the fifth nerve are not so severe as are those of the second division of the fifth nerve, which we have just been considering, and these neuralgias more unfrequently

arise from decayed teeth. They are more persistently dull and aching, and have not a sharp lightning-like character. They are more frequently associated with neuralgias at the back of the neck and even down the neck and arm. This form of neuralgia, in my experience, is most frequently met with in hysterical women and in young girls who are pale and have failed to menstruate at the right time.

CASE XX.—NEURALGIA OF THE JAWS, CURED BY GELSEMINUM
SEMPERVIRENS.

A young lady, aged 18, was brought to me on account of the severe pain from which she was suffering in the lower jaws. Sometimes the pain was on one side of the face and sometimes on the other. She was one of six children, all of whom were healthy except herself. She was pretty well developed and of average height. She had never menstruated, and the bowels were obstinately confined. She was unable to sleep at night, and as soon as she got into bed the pain in the jaws came on, and kept her awake for hours. She was highly hysterical, suffered very much from cold feet, and she greatly dreaded going to bed for fear of the pain coming on. It was quite evident, in this case, that the neuralgia was due to a want of red blood and to the absence of the normal menstrual flow. Half a dram of bromide of potassium, with 15 drops of tincture of gelseminum (at night) cured her neuralgia, and with the $\frac{1}{30}$ gr. of phosphorus three times a day, and an aloes and myrrh pill every third night, her menses came on, and with them her colour.

We are scarcely in a position to state for what length of time a neuralgia may last. For my own part, I am greatly inclined to look upon these neuralgias of the head and face as I invariably do look upon some epileptics. I believe that the neuralgias or the epilepsies may be cured for a time and that they also *may* sometimes be permanently cured; yet, on the other hand, it is an unquestionable fact that a neuralgia or an epilepsy, if it has had anything like a persistent existence, may recur again, provided some exciting cause is called into action at any period in the life of the individual, let that period be ever so remote from the time of the first seizure. Patients, if properly treated, are invariably

cured. There are cases, however, which come on at an advanced period of life and are seen too late by the physician, and which become habitual and will not yield to any known remedial agencies. Such as these are not unfrequently mixed up with organic disease. *If a neuralgia do not yield to treatment within a given time—and I am referring now to neuralgias of advanced life—the patient generally dies from exhaustion, or from apoplexy, or some form of insanity supervenes from which recovery never takes place.* Neuralgias of the fifth nerve, at times, are not easy of diagnosis, and the most scrupulous care is required to make sure what form of neuralgia we have to treat. I am greatly disinclined to agree with some authors concerning the neuralgic state. Just as in epilepsy, so is it in neuralgia. In the epileptic the patient may have only the slightest loss of consciousness, or the loss of consciousness may be profound. In the neuralgic, the pain may be of the slightest character or it may be simply agony. There may be degrees of neuralgia, as there undoubtedly are degrees of epilepsy and degrees of headache. The time may come when degrees of nerve-force and degrees of pain, as degrees of temperature, may be calculated, but as in taking specific gravities we have a standard in water, so in calculating the degrees of neuralgic or epileptic forces, we must first ascertain, as a standard, what is the normal vital capacity of our patient. As I before stated, it is essentially necessary, as far as possible, to establish with some amount of certainty the cause of neuralgias of the head and face (fifth nerve), whether they be central or merely peripheral. This is, however, not so easy a matter. Yet, if the neuralgia be of central origin, we shall soon find some defective action of the brain in reference to memory or some other function of the mind. There may be also some definite paralysis of more than one nerve coming from the brain, and what is usually characteristic, an absence of painful spots during the intervals of the attacks. Therefore, I would here observe that it is extremely important that we should be most careful and guarded in giving an opinion as to what may be the cause or causes of a severe and prolonged neuralgia. There are many of the most per-

sistent forms of pain which begin as an ordinary face-ache or stiff-neck, and which are allowed to increase until they become most intractable neuralgias.

Summary of Treatment for Facial Neuralgia (Neuralgia of the Fifth Nerve).—The general treatment of this disease has been fully considered, and it has always been my practice to treat neuralgias of the face upon general principles. *Sex, age, and constitution must be first carefully considered, and then every care must be taken to find out if there be any local cause setting up irritation in the nerve.* Above all other causes, possibly decayed teeth are the most frequent. Of course, the removal of foreign bodies and growths will often cure a neuralgia at once, and these matters should always be carefully sought after. I am never led away by my patients' statements as to what they have done, whom they have consulted, or the remedies which have been used. For of this I am certain, that the cure of a neuralgia frequently depends upon the dose of the drug which is administered. Patients nowadays are amusingly learned in reference to diseases and medicines, but they frequently fail to note how differently a drug acts according to the dose in which it is given. I have of late surprised some of my patients in reference to this question.

CASE XXI.—NEURALGIA OF THE FACE, CURED BY LARGE DOSES OF QUININE WHEN SMALL DOSES HAD FAILED.

‘A lady of fashion, with an exhausting neuralgia of the face and head, and of a rheumatic type, looked at my prescription, and seeing that I had ordered her quinine, said: “Surely! you don't hope to do me any good with quinine, after what I have told you about it, and how much I have taken of this medicine, and how useless it has been in relieving my pain, and more than that, it never did agree with me!” Nothing daunted at this remark, I told her to please to do as I requested, if she wished to be cured; and it was really with some hesitation that she consented. I gave her 10 gr. of the disulphate of quinine, 15 gr. of carbonate of iron, and 30 gr. of carbonate of soda for a dose, to be made into a paste with honey, to be taken at one o'clock, seven o'clock, and at bed-time. It produced, she said, a feeling of tight-

ness around the head, and singing noises in the head, but three doses cured her neuralgia.'

In these cases of neuralgia, so long as *I am convinced that there is no central brain-disease*, I prescribe quinine in large doses, say 10 gr. I would not advise such large doses to be persisted in. It will usually be found to be the case, that if this be the appropriate remedy, the neuralgia will yield, if not entirely disappear, after three or four doses, and if it does not do so, half dram doses of the tincture of iron may be prescribed, to be taken every four hours, freely diluted with water.

If there be a gouty history, or a history of dyspepsia, then alkalies with iodide and bromide of potass should be given, with Dover's powder in full doses. M. Trousseau speaks very highly of opium, which he gave in his practice in enormous doses. I have found nepenthe to be a valuable narcotic, even when opium sometimes fails; the best preparation is that of Messrs. Ferris and Score, of Bristol. If these fail, we must then have recourse to arsenic, aconite, phosphorus, and other specific remedies which have been mentioned. Hypodermic injections of morphia, and atropia blisters with morphia sprinkled upon the raw surface, liniments of chloroform, of aconitine, of atropia, must all be tried, and all tonic and alterative remedies must not be neglected.

Electricity and Galvanism have been so perfected of late years, that their application as remedial agents in almost every form of neuralgia, is of the greatest importance. In all the more chronic forms of neuralgia, both the constant and induced currents should have a prolonged trial, and should not be set aside because they have not been found useful at first. I am quite sure that I have been amply repaid, over and over again, by persisting day after day and week after week in the use of galvanism, when other remedies have failed. Sometimes the continuous current will be found to answer best, and at other times the faradic current. I frequently use the two consecutively at one sitting, and I am quite sure with advantage. In neuralgia about the face

and head, moist sponges are more workable than the carbon electrodes. I frequently make my hand the anode, and a broad tin plate the cathode, which is fixed at the back of the neck. In this way the hand can be covered over a large surface of the head, or the tip of the finger can be directed to certain painful points. I am afraid no very set rules can be laid down for the guidance of those who have not had experience in electrical treatment. Erb says :—'In order to exert an action on the main divisions of the nerve at the base of the skull, and after their emergence through the foramina of the sphenoid bone, it is advantageous to conduct the current transversely through the skull at the appropriate points, the anode being placed on the painful side. In the more severe cases (he says) I have found a polar action at these points, with a strong stable current, at first increasing and then decreasing in intensity, particularly useful.'* Benedikt recommends that in severe cases galvanic currents should be passed longitudinally and transversely through the skull and along the sympathetic nerve, and I believe I have sometimes seen good results from this method of treatment. All those who have used galvanism and electricity extensively in neuralgia and nervous affections must have been convinced of its wonderful powers. In some instances, and in cases which cannot be defined, it seems to exert an almost magical influence, whilst in others it appears to have little or no effect whatever; but its proper and careful (certainly not hesitating) application (in reference to mode of application, quantity, quality, and intensity of the current employed, as well as the exact parts to which it is applied), is of the greatest importance, and consequently requires no small amount of practice, in order that its usefulness may be thoroughly and completely understood.

Nerve Section has now been performed so many times for obstinate and incurable neuralgias, that we must not omit the notice of it in the list of remedies. It is rarely, if ever, practised

* Erb, 'Diseases of Peripheral Cerebro-Spinal Nerves,' Ziemssen's 'Cyclopædia of Medicine,' vol. xi. p. 122.

for other neuralgias than those of the face and jaws. There is very great doubt, at the present time, relative to the value of this operation. Still, in some instances, it has been put to the test in very severe cases, and great good has resulted. Whether the freedom from pain which is experienced for some time after the operation is permanent or not appears to be rather a question for doubt, and in many cases not even temporary relief has been derived. Yet, when we see a neuralgic patient suffering week after week and year after year, when all remedies have been tried and found to be of no avail, and when, as we find in the majority of instances, the patient will beg for something to be done, even at the risk of life, surely an operation is in every sense of the word justifiable, and if it is not curative, it is, to say the least of it, palliative. A. Wagner* has written an excellent article on all matters concerning this operation, in reference to the indications for its performance and its after treatment. The following case of Mr. Savory's† is of very great interest :

CASE XXIII.—NEURALGIA ON THE DENTAL NERVE, CURED BY SECTION.

'A man aged 53 years, but looking older, was admitted into St. Bartholomew's Hospital, March —, 1875. For seven years the patient had suffered from intense neuralgic pains in the face, occurring at regular periods. The first fit, the man said, was brought on by yawning. Eating, drinking (especially cold drinks), talking, or tapping a tooth would cause an attack. To take food, the patient lay on his back, took very small morsels, and ate very slowly on the left side of the mouth; sometimes the attacks occurred two or three times a day. At first the pain commenced in the last molar tooth, which was extracted, but the pain then shifted to the next, and each time a tooth was removed the pain was referred to the adjacent one. When an attack occurred, the patient sprang up, his face became red, his eyes suffused, and there was an expression of intense agony in his countenance; he seemed to lose all command over himself, and rushed about the

* A. Wagner, 'Archiv f. Klin. Chirurgie,' Bund XI.

† *Lancet*, July 3rd, 1875.

ward with his hands, at one moment, tightly holding his jaw, and, at another, tearing his hair. As the patient did not improve, and as he earnestly implored that something might be done, Mr. Savory decided, on consultation with his colleagues, to trephine the lower jaw, and divide the dental nerve. This was done on the 21st of April. Two incisions, meeting below at an angle, were made in front of the masseter muscle, on the right side of the lower jaw, and the triangular flap of skin having been raised, the bone was trephined, and a piece about the size of a sixpence removed; the dental nerve and artery were thus exposed on the horizontal diameter of the circle, and Mr. Savory then cut out about one-third of an inch of the nerve. For three or four days after the operation the patient still felt the twitching sensations, which on the second day were rather severe, but no fit occurred, nine days after the operation he was able to eat an egg, and on May 2nd was allowed fish. He was discharged on May 16th quite well, and without pain of any kind. On May 29th he was still quite free from pain.'

How this man got on after this is not known, but the operation, as it produced temporary relief, was quite a justifiable one.

NEURALGIA OF THE NECK AND BACK OF THE HEAD.

Cervico-Occipital Neuralgia (Neuralgia of the Four Upper Cervical Nerves).*—This kind of neuralgia is not of very common occurrence, but it is extremely painful, and, as a rule, does not give rise to any constitutional symptoms. Patients will say that the head seems fixed in a vice, and that the slightest attempt to turn the head produces the most acute pain. I have a lady now under my care who is just recovering from this form of neuralgia.

CASE XXIII.—NEURALGIA OF THE NECK AND ARM, CURED BY MERCURY AND QUININE.

'C. N., aged 53, in perfect health and quite active, first experienced what she called a crick in the back part of the neck as she was raising the head from a stooping posture. This continued for some few days, and she rubbed liniments into the neck, which did not relieve the pain. I did not see her until six months after the commencement of the attack. She had consulted a great many doctors without the slightest benefit. She said that between the paroxysms she went out in the carriage, and walked about, and attended to her little household affairs, but that she dared not turn her head. The pain was confined almost entirely to the left side of the head and neck; it extended from the back of the neck and the back of the head over the side of the head and the ear, and down the side of the neck to the clavicle; and over the shoulder-blade, just above the clavicle, was a large puffy swelling of no solidity, which yielded immediately to pressure. (This form

* In this form of neuralgia we have five nerves chiefly affected, namely: 1. The greater occipital nerve; 2. The lesser occipital nerve; 3. The great auricular nerve; 4. The inferior sub-cutaneous nerve of the neck; 5. The supra-clavicular nerve.

of swelling is common to this kind of neuralgia, as well as to cervico-brachial neuralgia, and it always disappears as the neuralgia becomes cured.) After examining the parts very carefully, to be sure that there was no caries of the vertebræ, I came to the conclusion, from its persistency that there must be a chronic inflammation of the posterior roots of the cervical nerves. As she had tried blisters and all kinds of external applications, and as she was of a full and plethoric habit of body, I determined to get her under the influence of mercury, and I felt sure that one, if not more, of the numerous medical men whom she had consulted must have given her the iodide of potassium. Whilst she was in my consulting-room, I applied the faradic current briskly to the insertions of the neuralgic muscles with the anode well fixed to the spine. After ten minutes she moved her head freely to either side without pain. This she had not done for six months. I then prescribed for her the following powders, one of which she was to take every three hours: *℞. Hydrarg. c. creta, gr. iij. ; quinine, gr. iij. ; p. ipecac. cæ., gr. i. ; ft. pulv.* On the following morning she returned with the neck just as stiff as before. I again galvanised her rather more freely, and after this she again moved her head with comparative comfort. The treatment was continued for nine days, and each day the stiffness of the neck returned, but only in a modified degree. At this time the gums became decidedly spongy, and coincidently with this the neuralgia entirely left her.'

I always advise the use of mercury to cause decided salivation in some forms of chronic neuralgia, especially when other remedies have failed. I do not mean that I would salivate those cases of extreme debility and exhaustion which one often meets with, but I now refer to those cases where the patient is full-blooded, liable to congestion, but otherwise of robust constitution. I certainly have cured by these means many cases of obstinate neuralgia, which otherwise, possibly, would have been operated upon. I am anxious here to draw attention, in this kind of neuralgia, as well as in others of the nerves of the spine, to the association of *neuralgias with commencing spinal disease; and this is a point which should never be overlooked.* Some years ago a patient was admitted into the Central London Sick Asylum under my care, and was said to be suffering from the kind of neuralgia about

which I am now writing. (The case was reported in the *Medical Times and Gazette*.)*

CASE XXIV.—CERVICO-BRACHIAL NEURALGIA, DUE TO CARIES OF THE ATLO-AXOID JOINT.

'In the year 1871, a woman, age 32, was admitted into the Central London Sick Asylum under my care, who suffered from cervico-brachial neuralgia, which was due to disease of the vertebræ of the neck, and commenced with a feeling of stiffness at the back of the head and neck; in a short time the pain became agonising, and increased whenever she made the slightest attempt to move the head either to the right or to the left hand, and also when she altered the position of her body. In the treatment of this case every means was adopted to bring about a cure, but she died from pain and exhaustion.'

A short time ago the following case, which shows how very necessary it is, in these neuralgias of spinal origin, that we should be extremely careful in making our diagnosis, came under my observation :

CASE XXV.—CERVICO-OCCIPITAL NEURALGIA, DUE TO CARIES OF THE CERVICAL VERTEBRA IN A CHILD.

'A little child, about three and a half years of age, had been complaining of a stiff-neck and of pains running down her arms. When I saw her she was lying in bed with that look of fearful anxiety which these poor little creatures have when they feel themselves absolutely powerless to make known their ailments. She was unable to move her head in the slightest degree to either side without the movement causing her the greatest pain, and whenever she made an attempt to raise the head from the pillow she was quite unable to do so. There was a marked tender spot upon pressure over the spine at the second cervical vertebra, and when the head was pressed upon the trunk it gave her great pain in this part. There was no doubt that this poor little child's neuralgia was due to disease of the spine (caries).'

I note these two cases (I could quote many others) merely to show what care is oftentimes required to prevent us from falling into error. The treatment of this neuralgia, when not due to caries of the vertebra, is similar to that of neuralgias of the face and head.

* Dr. Ringer speaks highly of the value of *Tonga* in neuralgia of the fifth and occipital nerves. See *Lancet*, March 6, 1880.

Anti-rheumatic and gouty remedies should be prescribed, and full injections of morphia underneath the skin are frequently of great service.

Neuralgia of the Neck, Arms, and Shoulder (Cervico-brachial Neuralgia).^{*}—In this form of neuralgia we find the lower part of the back of the neck to be the seat of the pain; but this, however, is not necessarily the case, for the pain may be seated solely in the upper part of the arm, usually, however, on its posterior aspect, and on the inner surface of the fore-arm, as well as on the back of the fore-arm, and frequently extending into the hands and fingers, and sometimes into the ball of the thumb. There are some authors who have carefully and theoretically, I cannot say clearly and practically, brought their anatomical knowledge to bear in the precise classification of these neuralgias; however, I have frequently experienced great difficulty in following up their synthetical calculations. The causes of this form of neuralgia are almost indefinite. I should say, judging from my own experience, that they were, not unfrequently, due to disease of the brain, or to disease of the spinal cord, or of the posterior roots of the spinal nerve. The most painful form of cervico-brachial neuralgia, that I ever saw, arose from a tumour of the dura mater of the brain; whereas, on the other hand, in a large tumour of the neck, which originated from the dura mater of the spinal cord in relation with the nerves coming from the fifth and sixth plexus of nerves, there was no neuralgia or pain of any kind whatever.

In paralysis (hemiplegia), how frequently we find the most intense neuralgia of the nerves of the neck, and of the arm, from brain disease. So that here, as in the other form of neuralgia of the neck, we must be very careful and guarded in forming an opinion. Many of the neuralgias which have been diagnosed by Trousseau, Valleix, Anstie, and others by means of the spinal tender spots, as due to some irritation or some sub-acute inflammatory condition of the posterior spinal nerves, I believe to be

^{*} The nerves which may be affected in this form of neuralgia are the four lower cervical and the first dorsal, and the sensory branches of the brachial plexus and their ramifications.—See Quain's 'Anatomy.'

due, in many cases, to an inflammatory condition of the vertebræ, or even to a sub-acute congestion of the spinal cord itself. For my own part, I am greatly inclined to the opinion, that changes in the lateral columns of the white matter of the spinal cord are also frequently the cause of neuralgia, and that this may occur either from too much or too little blood in them. Mr. Salter has shown that neuralgia of the arm may be due to decayed teeth. *It is quite clear that these neuralgias are frequently due to foreign bodies, aneurisms and growths within the chest, of which we have a large number of cases on record.* In the commencement and course of progressive muscular atrophy, we find these neuralgias to be invariably associated, and also to arise from poisoning of the blood by lead, and from malarial and other fevers. In my practice, when these neuralgias have not been due to pressure, as from some foreign body, tumour or cancerous growth within the chest, or from central disease of the brain or spinal cord, they have been invariably accounted for by exhaustion of the nerve-force throughout the nervous system generally. Worry, fatigue and excess of some kind or the other, as well as too great muscular exercise, will bring on muscular fatigue and neuralgia. This neuralgia may perhaps be said to be more paroxysmal than some others; and, although the essential nature of the neuralgia is an exhaustion of the cord of the neck and of the nerves which originate in it, yet patients are constantly finding out, or trying to find out, some other cause for it, such as an injury to the arm, an overstrain, or some injury to the joints, or rheumatism. There can be no doubt that it is a very painful affection. It may extend over the neck, and between the shoulders to the shoulder-blade and down the arm; and the least jolting of the body or sudden movement of the arm will bring on a severe attack of pain. The character of the pain is rather burning, boring, dull and aching, than of a sharp shooting nature. I have seen several cases when the arm has become suddenly powerless, and muscles supplied by groups of nerves will not react to ordinary electric stimuli. This form of neuralgia does not disappear, as a rule, so rapidly under treatment as do some other forms of neuralgia.

Treatment.—All mental depressing causes, or bodily fatigue, worry, anxiety, etc., must be removed if possible, and in some cases it is advisable to ensure perfect rest of the arm by keeping it in a sling. The hypodermic injection of morphia and atropia will be found most valuable, but I cannot say that ordinary counter irritation, or flying blisters, have been particularly useful in my practice. The continuous galvanic current to the spine of the neck, or the faradic current worked freely over the shoulder and the arm, is frequently of the greatest possible value, but it must be used persistently every morning, and, in some cases, twice a day. The electrodes, or at all events the anode, should be broad; an oblong tin plate, six inches long by four inches wide, and covered with flannel, which must be moistened with water, answers best; the cathode may be of carbon or sponge, and each sitting ought to be prolonged for twenty minutes or half-an-hour. If there should be muscular atrophy, then injections of strychnine should be used, and distinct muscles should be picked out, and tested by the galvanic current, in reference to their comparative reaction with other muscles, as this is not unfrequently a test, as to whether the neuralgic condition may, or may not be, one of commencing muscular atrophy. If, however, the neuralgia does not yield to the remedies here suggested, change of air should be tried, as well as Turkish baths, preparations of quinine, zinc, steel, arsenic, phosphorus, etc., etc. The diet should be of the most nutritious kind, and whisky and good port wine taken in fair quantity.

CASE XXVI.—NEURALGIA OF THE NECK AND ARM, CURED BY IODIDE OF POTASSIUM, ETC., ETC.

‘This case shows well the good effects of the continuous current in this form of neuralgia. A gentleman, aged 38, consulted me concerning a severe neuralgia in the left arm, and shoulder, and blade-bone, from which he was suffering. He said that it came on very gradually, about three months before he came to see me. He had been getting dreadfully out of health for some time, owing to a series of troubles of various kinds which had preyed greatly upon his mind. It did not affect his appetite, but he tired upon the least exertion, perspired much too freely at night and after walking a

slight distance. He attributed the neuralgia to the following cause: He had been walking leisurely to meet a friend, and was wet with perspiration, and, owing to the friend not being punctual to his appointment, he had to stand in an east wind, and, although it was in the summer months, he felt chilly, and, he remarked, he had for a long time previous been peculiarly susceptible to cold draughts of air, when other people could not discern them at all. In the evening he complained of a dull, aching pain all over the left shoulder, and on the following morning he awoke about four o'clock, as he said, in agony. The paroxysm of pain came on, as a rule, about four o'clock in the afternoon and four o'clock in the morning, and it would last for an hour or more. He told me that every morning he had to get out of bed at about the same hour, and walk about the room until he was fairly worn out with pain and fatigue, and he would then fall down to sleep anywhere. He had tried no end of remedies, and he began to despair of anything doing him good. I examined the arm carefully; there was no atrophy of the deltoid, but the other muscles of both the arm and forearm were weak and flabby, and the grasping power of the hand was deficient. He was thoroughly out of health, although he had just returned from Brighton, where he had been for over a month. He was in every sense of the word "shaky;" he was indifferent to everything, extremely irritable and restless, slept indifferently and was wakeful. I prescribed nothing for him but the most generous diet, Wyeth's dialyzed iron three times a day, and 1 scr. of the iodide of potass every night, as well as $\frac{1}{4}$ gr. of morphia subcutaneously injected into the nape of the neck every night; and I applied the continuous galvanic current to the neck, arm and shoulder every morning. The first sign of improvement was, that on the third night he slept, and found that he had tided over the morning paroxysm. In a week he had lost all pain, and I sent him off to Switzerland, where he soon completely regained his health.'

Neuralgia between the Ribs (Intercostal Neuralgia).—This form of neuralgia is generally confined to one side of the body, and is much more common amongst women than it is amongst men. I am of opinion that pure neuralgia of the intercostal nerves is of very rare occurrence, and I cannot call to mind more than some seven or eight cases which I consider to be purely neuralgic. The typical form of neuralgia of this kind is that which is usually asso-

ciated with shingles. The most agonizing pain, which I think I ever witnessed, was occasioned by an intercostal neuralgia in connection with rodent ulceration under the left breast. *The chief causes of intercostal neuralgia are phthisis pulmonalis, spinal disease, growths within the chest, and aneurisms. Cancerous growths of the mediastinum often give rise to very severe neuralgia.* It is impossible, however, to enter into the nature of these in detail, although it is most important that we should, if possible, make ourselves sure of the exact cause of the neuralgia, *which is oftentimes merely a symptom of some grave disease within the chest.* The pains of these neuralgias vary very greatly in character—sometimes they are dull and persistent, at other times lancinating and burning. The patients will often say that the pains dart around the chest like lightning, and then form a sort of band or girdle, so that the chest seems as though it were fixed in a vice; anything that unduly excites these nerves will bring it on, such as yawning, sneezing, or coughing. The gait and posture of the patient is strikingly indicative of the existence of this affection, and also of shingles. The body will be naturally bent over to the painful side, and the face will be expressive of great anxiety, lest too much movement, or too deep a breath, should bring on an attack. In all cases of pain of the chest-walls, great attention should be paid to the condition of the pleura, the lungs and the circulation, as well as to the spinal cord and the vertebral column.

CASE XXVII.—INTERCOSTAL NEURALGIA, DUE TO DIFFUSE TUBERCLE.

‘A young girl came to me at the North London Hospital for consumption and diseases of the chest, complaining of the most agonizing burning pain over the right shoulder and between the ribs. It usually came on at night, and when it came on she could not take a deep breath on account of the intense pain it caused her. She looked ill, and she had a dry, harsh cough, and she was losing flesh, and perspired too freely at night. Her sister had died of consumption. The stethoscope gave no evidence of disease of the chest, but the breathing was harsh and puerile and a little jerky; and her lips and face were rather blue. I stated that she had diffuse tubercle which was lying latent, but which would be

the death of her, and I advised her friends to send her to Ventnor. After being there for some few months she went to some friends in the country, where she died. The pain was best relieved by $\frac{1}{4}$ gr. doses of the extract of opium every four hours, and by turpentine stupes.'

A fibrosed lung contracting will often give rise to severe neuralgia of the intercostal muscles.

Treatment.—In the treatment of this kind of neuralgia, turpentine is very effective in 10 drop doses, sometimes mixed with 5 drops of compound spirits of sulphuric æther. Nitrite of amyle inhaled is sometimes useful. Flying blisters dressed with morphia often give great relief, or a hot draught of brandy or whisky and water. The croton liniment is sometimes of use; warm applications and poultices with a little mustard relieve at times when other remedies fail. I cannot say that electricity has proved very useful for this kind of neuralgia in my experience. A persistent intercostal neuralgia must be looked upon with great suspicion, until time has been given so as to enable the physician to make sure, by careful examination, whether it is or is not due to some serious and vital disease of the chest. Perhaps, of all neuralgias, Valleix's painful points are more to be relied upon in this than in any other form of neuralgia: 1. There is the vertebral point close to the vertebral column; 2. The point where the nerve emerges beneath the skin, about the middle of the nerve; 3. The sternal or anterior point, where the nerve pierces the muscles anteriorly.

Neuralgias of the Loins, Buttocks, Groins, Thighs, etc.*—

The neuralgias which arise from the lumbar and sacral plexuses of nerves are as often due, and perhaps more often due, to some

* The nerves which are affected in these neuralgias are those which come from the lumbar plexus, and which give off the following branches to the skin, namely, the ileo-hypogastric nerve, the ileo-inguinal nerve, the lumbo-inguinal nerve, the external spermatic nerve, the nervus cutaneus femoris lateralis, the nervus cruralis, nervus saphenus, nervus obturator; also those which come from the sacral plexus and give off the following branches to the skin, namely, the nervus cutaneus femoris posterior, nervi articulares genu superior et inferior, nervus cutaneus cruralis posticus et medius, nervi communicantes peronei et tibialis, nervi peronei superficiales et profund, nervus tibialis et plantaris, and the nerves supplying the generative organs, and parts in the immediate neighbourhood.

mechanical cause, rather than to a purely painful condition of the nerves themselves, and I would instance this observation by the violent pain which is felt in the inner part of the knee from disease of the hip-joint; by the burning pains which are felt down the thighs from disease or irritability of the uterus or ovaries; by the pain which is experienced in the testicle from the passage of a renal calculus down the ureter; by the most agonizing pains down the thigh from a hernia, aneurism, cancerous growth, or even a mass of impacted fæces. One of the common causes of this neuralgia is disease of the vertebra and the burrowing of pus between the muscles; and great pain, we know, is often referred to the loins from disease or injury to the external generative apparatus. Well-known as these points are, yet I fear they are not considered with that amount of care which is demanded before we can arrive at a correct diagnosis, and of course the success of our treatment hangs upon this point more than it does upon any other. I shall, further on, consider abdominal neuralgias under a special heading, and shall now briefly review the neuralgias of the back, the neuralgias of the outer part of the buttock and thigh (sciatica), the neuralgias of the inner part of the thigh (cruralgia); and as the treatment of the minor neuralgias in these regions, and of the neuralgias of the generative organs, is much the same, I shall omit here any further notice of them.

Neuralgia of the Loins (Lumbago)—is very often looked upon as a purely muscular affection, but in a large number of cases, and I am inclined to think in the majority of cases, it is a pure neuralgia.

CASE XXVIII.—LUMBAGO, CURED BY SHOCK.

‘A physician, a friend of mine, a strongly built man, and who suffered from what he called lumbago, had a patient residing with him who was not of right mind. One morning the doctor came down to the breakfast-room doubled up with this lumbago, and he could not raise his body upright for a king’s ransom. The lunatic, for such he was, thought that this was a favourable opportunity to rid himself of a powerful foe, which he thought the doctor to be, and so rushed at his Esculapian antagonist with the carving-knife.

The sudden shock to the doctor's nerves at once cured the neuralgia, which was not muscular but nervous, and the doctor soon put his opponent *hors de combat*.'

The pain of this neuralgia is of a dull, aching, wearing character, but the least movement or strain of the muscles brings on a paroxysm of agony, and the pain becomes tearing, cutting, grinding, sometimes stabbing, shooting or darting. Valleix says the painful points in this neuralgia are: 1. The 'lumbar point,' near the lumbar vertebra; 2. The 'iliac point,' near the middle of the crest of the ilium; 3. The 'abdominal point,' near the linea alba. Now these so-called 'painful points' are interesting as 'landmarks,' but I seriously question their practical value. I have paid considerable attention to elicit the truth of these 'painful points' in reference to the neuralgias which I am now considering, but I have so often found them fallacious, that I have discarded them altogether as of little utility. So long as authors upon neuralgia will see all painful affections as neuralgias, no matter what their origin may be, so long will they be led into error by relying upon the so-called 'painful points' in diagnosis.

Treatment.—Turpentine stupes, and the continuous galvanic current, with hypodermic injections of morphia and atropia, rarely fail to effect a rapid cure.

Neuralgias of the Thighs (Femoral and Crural Neuralgias).—These two forms of neuralgia are the most common of these neuralgias of the thigh. The crural form of neuralgia takes the middle and inner part of the anterior surface of the thigh, the anterior surface of the knee, the inner surface of the leg, and the foot as far as the great toe; whilst the other course of this neuralgia takes the outer side and back of the thigh down to the knee. A patient of mine was subject to this latter form of neuralgia; sometimes the pain was burning and tearing, and at other times there were mere creeping sensations over the outer part of the thigh and buttock; sometimes the part was over sensitive, and at other times there was a diminution of the normal sensibility. It came on suddenly from no particular cause,

and it would last for hours, and then pass off and not return for some weeks. The electric brush relieved him almost immediately. *In either of these neuralgias it is necessary to observe precautionary measures, and to bear in mind the fact that they may be the precursors of rapidly developing muscular atrophy. I have seen within the past twelve months many cases of this kind, which were really cases of commencing muscular atrophy, and which had been treated hopelessly as neuralgia.* The most frequent cause of these neuralgias is lying upon damp ground. In the former, or crural neuralgia, we have a condition produced usually by reflex action or sympathetic irritation, and which is closely connected with neuralgias of the *generative organs*. The causes are not unfrequently those which have been enumerated, namely, disease of the spine, psoas, abscess, cancerous or other tumours pressing upon the nerves, herniæ, irritation and disease of the womb or ovaries, and impacted masses of fæcal matter in the folds of the intestine. All these conditions have to be carefully looked for before any curative treatment can be adopted.

CASE XXIX.—NEURALGIA OF THE LEG, DUE TO ABDOMINAL CANCER.

‘A gentleman, a young man not more than 34 years of age, consulted me not long ago for a most painful affection of the inner part of the thigh and leg, even to the great toe, and it extended over the anterior and inner surface of the thigh. The pain was of the most acute character, and took the course of the crural nerve and its branches. He had been suffering in this way for some time, and had derived only temporary benefit by large doses of opium; he had tried change of air at various places with little or no benefit. He said that he was rapidly losing flesh, perspired most profusely at night, and that he thought himself in a very bad way, although he had been told repeatedly that it was only neuralgia and that he would soon get better. I examined the thigh in Scarpa’s space, and found the lymphatics enlarged and hard. I then followed them into the abdomen, and the cause of the poor fellow’s neuralgia was at once apparent, for upon making deep pressure over the lower part of the belly on the right side, there was a hard cancerous lump as big as a tennis ball. I told him that the neuralgia would decrease as the lump increased, but

that I could not hold out to him any hope of recovery. Shortly after this time he went into the country, and his friends told me that my predictions were verified.'

I give this case merely to show how necessary it is to exercise great judgment and care before speaking lightly of a neuralgia, and especially of neuralgias about the lower extremities.

Neuralgia of the Sacral Nerves (Sciatica).—*Sciatica* is one of the most common forms of neuralgia, and like neuralgia of the fifth nerve is sometimes very difficult to cure. The buttock and the posterior surface of the thigh are usually the parts most affected, but the pain may extend to the knee, and to the calf and leg, and even to the foot.* A great deal has been written about this form of neuralgia from time to time, and, from an early period in the history of medicine, very many remedies have been put forward for its cure. In some individuals it appears to run a somewhat definite course in spite of all remedies, when it suddenly disappears without any apparent reason; or, on the other hand, the cure is not unfrequently attributed to some simple drug which was being used at the time, and which drug is, of course, ranked amongst the specifics for the curative treatment of this disease. The sciatic nerve, from some reason or other, whether it be on account of its size or its length, is often the seat of a dull, aching, wearing pain, which can be scarcely called neuralgic. The origin of the pain is very difficult to define, but it often occurs in people of gouty or rheumatic habit of body, and in persons who suddenly exchange an active life for a sedentary one. Although this neuralgia is sometimes associated with premature degeneration of the tissues of the body generally, that is, in persons who are prematurely old, yet the most severe cases of sciatica which I have ever seen, have been in persons between thirty and forty years of age, and who have been apparently in robust health. There can be no doubt that the sciatic nerve may be the seat of specific

* The nerves most conspicuously affected in this neuralgia are the posterior cutaneous nerve of the thigh, the superior and inferior articular nerves of the knee, the posterior cutaneous nerves from the crural, the communicating peroneal and tibial nerves, and the tibial and plantar nerves.

and defined inflammatory action, which may resolve and the nerve regain its normal function, or, on the other hand, the inflammatory change may lead on to disorganization of the nerve and to atrophy of the limb. Like neuralgias in general, and like neuralgias of the upper extremity in particular, sciatica may be due to all kinds of exciting causes, to external injuries, to violent strain or exertion, to disturbances of the circulation, to mechanical pressure, such as over-distension of the bladder from retained urine in hysterical women, and impaction of fæces from constipation, and from tumours and displacements of the womb, from cancer, ovarian tumours, herniæ, aneurisms, etc., etc.

The larger proportion, however, of sciaticas arise from catching cold, getting wet through, sitting about in damp clothes, and sleeping on damp ground. Sciatica is also due to depressing causes, such as severe illnesses, fevers and the like. A patient of mine, who had just recovered from typhoid fever, was exposed to a draught of cold air, and suffered in consequence from a most severe attack of sciatica. I have always been inclined to consider that sciatica may be brought on, in persons who are predisposed to neuralgias, by the non-elimination of gouty and rheumatic morbid material from the blood. We often find sciatica, and of a very severe type, *associated with diseases of the spinal cord*, but how far the sciatica is due to these conditions of the cord is a difficult matter to determine. The pains of sciatica are so variable, and so are the sensations of the limb, that it would be only a mere repetition of the character of the pains of other neuralgias to state them. The limits to the pain, and even the site of it, will vary in extent. The pain, however, usually begins in the sciatic foramen, and extends down the back of the thigh, sometimes to the calf and even to the sole of the foot; occasionally the entire area of the nerve will be affected with the pain. At other times, the pain will jump about from one point to another, and from one cutaneous nerve to another, and the patient will often be able to trace the nerve affected solely through the direction of the pain. Cramps of the muscles are not uncommon, and sometimes they extend to convulsive movements, not only of

the muscles, but also of the limb. In a patient under my care the muscles of the thigh stood out as hard as iron, and as they became relaxed then fibrillations and convulsive movements set in. In all these cases of sciatica we have to consider the immense overstrain to which both muscles and nerves are subject, and the *possible chance of paralysis coming on from muscular wasting*. This muscular wasting is doubtless, in part, due to the efforts of the patient to keep the limb as much at rest as possible; but it is, in greater part, consequent upon the disturbances to the regular action of the nerves of nutrition. Dr. Graves states that he has seen hypertrophy of the muscles, and in one case which I had under my care I am quite sure that there was hypertrophy. There can be little mistake made, if care be taken in diagnosis, between a rheumatic condition of the limb or disease of the hip-joint and a true neuralgic state. Valleix states that in rheumatism the patient indicates the seat of the pain with the whole hand, whilst in neuralgia he points to it with his finger.

The same rule holds good with sciatica, as it does with all other neuralgias. That is, the more energetically and thoroughly it is treated in the first instance, the less likely is it to be persistent or permanent. The longer the disease lasts, the greater will be the difficulty to effect a cure.

Treatment.—We have stated that the general health in pure sciatica is not often affected, and when a patient comes to me with this disease and complains of losing flesh, and if he has night sweatings, and becomes fatigued after slight exertion, and especially if he looks pale and careworn, I then suspect the neuralgia is due in a great measure to some condition of the body of a far more serious nature than the mere painful state of the nerve alone would indicate; and apart from testing the urine for *alkalinity* or *acidity*, it is always well to make sure that there is no *sugar* present; for should the patient be suffering from diabetes, then the *remedies* for ordinary neuralgia, which we are about to consider, will be of little value, and may be, perhaps, of *positive harm*. The presence of abnormal growths, such as tumours, or cancer of the

intestines, the uterus, or the lymphatic glands of the abdomen, should be carefully sought for, as well as the existence of foreign bodies in the course of the nerve or in connection with any of its peripheral branches.

When I have made sure, as far as possible, that the neuralgia is not due to any local injury, or to any of the mechanical causes of which we have been speaking, I prescribe 1 drop of *croton oil*, to be given every other morning for three mornings, and a draught three times a day after meals, containing $\frac{1}{2}$ dr. of the *iodide of potassium*, $\frac{1}{2}$ dr. of *carbonate of soda*, 20 minims of *liquor potassæ*, 20 minims of *spirit of peppermint*, and 2 ozs. of water; and a hypodermic injection consisting of $\frac{1}{2}$ gr. of *morphia* and $\frac{1}{6}$ gr. of *atropine* every night. The nozzle of the syringe should be sent well into the nerve just where it emerges from the sciatic foramen. If the neuralgia is of recent date, it is cured by this treatment in a week, or even less. This is the form of treatment that I always begin with, and, in combination with Turkish baths, I am happy to say, with the most favourable results. There are, however, many, and perhaps one may say the majority of cases, which have become more or less chronic before the serious attention of the medical man is called to them, and for these there are known to be a thousand and one remedies. We will now consider some of these remedies. Let me here state that I have found little benefit from the ordinary applications, which are often found to be very useful in some other forms of neuralgia. I refer to liniments of *aconite*, *belladonna*, *turpentine*, *opium*, *veratrina*, etc. They may, however, be tried, as they sometimes produce temporary relief, and I may say the same of permanent *issues* made with *caustic potass*, and of the use of the *actual cautery* and *galvano-puncture*. Far better than any of these are *flying blisters*, not larger than half-a-crown. Two or three may be applied at one time along the course of the painful nerve, and when the blister is complete the raw surface should be dressed with *morphia cerate* (4 grs. ad 3j.). It is well to place the blisters three or four inches apart, so that when they have healed fresh ones can be applied to the intervening spaces.

I have often relieved severe cases of sciatica by deeply cupping

the integument of the buttock over the sciatic foramen, and dressing the incised points with a mixture of glycerine, morphia, and atropine.

M. Trousseau speaks so highly of the following remedy, that I give it here, although I have never tried it. He makes twenty boluses out of the following mass: Rf. Ext. Belladonnæ, Ext. Opii, āā gr. xl.; Pulv. Guaiaci, gr. lxxx.; mucilage, q.s. These boluses are dried in an oven and kept ready for use. His mode of operation I give in his own words: * 'The patient is made to lie on the abdomen, and a portion of the skin of the buttock is pinched up over the point of exit of the sciatic nerve. A straight bistouri is then run through the pinched integuments at the base of the fold, and is next made to cut from within outwards. The sub-cutaneous cellular tissue is exposed at the bottom of the wound, and, after having filled this with some dry lint, kept in place by strips of sticking-plaster, the patient is left till the next day. Sometimes, however, although rarely, this simple operation suffices, not only to give relief, but absolutely to cure. On the ensuing day two and even three of the boluses just described should be placed in the wound, and kept there by a piece of sticking-plaster, under which, if possible, a small plate of very flexible lead or several layers of tin should be laid. A very small pea should be placed at the same time in the wound, and on this swelling out considerably during the day, the wound is maintained in a perfectly open condition. So long as the pain continues the treatment should be persevered in, but when the pain has ceased a single bolus should be laid inside the wound every day with a dry pea, and when all pain has ceased completely for eight or ten days, peas alone are used, as in the cases of issues.' He then says, 'I must declare that this mode of treatment has given me better results than any other in sciatic neuralgia, for it combines the action of narcotics and issues.' Valleix speaks highly of cauterization in transverse lines.

Erb,† in speaking of the value of the actual cautery, says: 'The

* Trousseau's 'Clinical Medicine,' vol. i. p. 502.

† Ziemssen's 'Medicine,' vol. xi. p. 189.

palliative effect of the application of a thin, *blunt cauteriser* to the *external ear* for sciatica is very remarkable, and has been corroborated by the best observers. Our ignorance of its mode of action is no reason why it should be held up to ridicule.'

The following short notes in reference to the treatment of a case of double sciatica may be interesting :

CASE XXX.—DOUBLE SCIATICA, CURED BY INJECTIONS OF MORPHIA AND ATROPIA, ETC.

'S. G. was admitted into the Central London Sick Asylum, December 2, 1874. Was always a very strong woman until March, 1874, when she was seized with acute pain at the bottom of the back; and this continued until she came under my care for treatment. I prescribed the iodide of potassium for her, and she was improving, when she had a severe attack of erysipelas. Her progress towards convalescence was favourable until March 1st, 1875, when she was seized during sleep with cramps of the muscles, at the back and outer sides of the thighs; these succeeded by rapid movements, so strong and so violent as to raise the whole of her body. When I saw her the following morning, the paroxysm had passed off and she felt pretty well. In the evening I was called to see her, and found her in the greatest agony, and suffering from severe pains darting like lightning down the back of both thighs, and the thigh-bones felt as though they were being scraped with a knife and the muscles were tense and hard as iron. During the paroxysms, when lying in bed, the thighs are slightly flexed, and she is unable to extend them. Between the paroxysms she walks down the ward fairly well, *and has no symptom or sign whatever of spinal disease.* At times, when she turns in bed, the movement brings on very severe pains and cramps. There was marked tenderness upon pressure over the lower lumbar vertebra, and at this point I injected deeply a solution of *half a grain of morphia* and the *fortieth of a grain of atropine*, sometimes three times a day, and gave her $\frac{1}{4}$ dr. doses of the *iodide of potassium* three times a day. After the first three days, the pain subsided day by day, and by the eleventh day from the date of seizure she was cured.'

I cannot speak too highly of the good effects to be derived from the *spirit of turpentine*, either when taken in the form of capsules by the mouth, or by injection per anum. Of the two modes of

administration, I prefer the latter. Three drachms may be injected up the bowel every night, with half an ounce of castor oil and a pint of warm gruel; the injection to be retained for some five or ten minutes, if possible. I could quote a large number of cases where the galvanic current has been extremely useful, but I look upon it as an aid to treatment, rather than as a direct curative agent in itself. The *anode* or *positive pole* should be placed at the bottom of the spine, whilst the *cathode* or *negative pole* is carried along the painful nerve. There can be little doubt about the galvanic current being more effective in sciatica than the faradic, but I have often used them alternately with great advantage. The duration of the application of the current should be from twenty minutes to half an hour. Many authorities say from eight to ten minutes, but my experience is certainly much in favour of the longer application. *Quinine* is generally spoken of as a most valuable agent in the curative treatment of sciatica. It certainly does not act as a specific, yet I am quite sure that I have cured some cases by its administration. Alterative tonics, as *bichloride of mercury* and *arsenic*, are worth a trial. *Bromide of potassium* I look upon as useless. *Mercury given to salivation*, in some of my cases, has acted like a charm, and the salicylates should be tried.

CASE XXXI.—SEVERE SCIATICA CURED BY MERCURY AND CHLORAL LOTION.

‘A gentleman, aged 37, consulted me last February on account of a most severe form of sciatica in one leg, from which he had been suffering for over twelve months. He said it was getting a serious matter, for the affected leg was becoming much weaker than the other, and he thought that it was wasting. I found some marked painful spots over the sacrum, the posterior, superior spine of the ilium, and at the sciatic foramen; and, in this latter spot, the pain upon pressure made him cry out. There were other painful spots down the limb, and also great tenderness upon pressure, down the course of the popliteal, post tibial and external cutaneous nerve. For some days he would merely feel a stiffness down the back of the leg, or strange sensations, as though some one was tickling it, or again, as though very hot water was being poured down it, and then suddenly, without any apparent cause,

the most violent pains would come on. He had tried galvanism, and, as he said, every other thing under the sun, from the Turkish baths in Jermyn Street to the baths at Ragatz. I asked him what good he thought I was going to do him, and he said, "Well, I suppose you can try to do something." So I sent him to bed, and *enveloped* the limb right over the buttock in flannel saturated with a strong hot solution of chloral, and covered it with indiarubber sheeting, and this I told his man to repeat every six hours, by night and by day; and I prescribed for him 3 grs. of blue pill, with $\frac{1}{2}$ gr. of the extract of opium, three times a day. On the second day I examined very carefully the *tender points*, and found only one and that was over the sciatic foramen; he had taken eight pills, and his gums were slightly tender; two or three times he thought that he had an attack coming on, but he made his servant apply fresh applications, and it passed off. On the fourth day his gums were very sore, so I told him to discontinue the pills; and upon examining the limb there was no shade of tenderness anywhere; and he remarked that he was very much obliged for the good it had done him, but that he really thought he had had enough of it. I told him that I felt sure his neuralgia was cured, and that he might discontinue the applications. I then covered the whole limb and buttock with flannel and a starch bandage, which he wore for little over a week, and he has since had no return of the sciatica, but at times, he says, that this leg gives out before the other, when he is getting tired.

In some cases of severe and continuous sciatica, the sciatic nerve has been cut down upon and stretched, and even some portion of it has been excised, but I have had no experience of this extreme treatment.* The neuralgias of the *external generative* organs require no special notice, as they are usually relieved by the treatment laid down for neuralgias in general. In some chronic forms of sciatica, when the pain is not very acute, and when it comes on with change of weather, and lasts for some few days, the *guaiacum* mixture of the pharmacopœa is a very useful and efficient remedy. The form of mixture which I give in such cases, and in lumbago, answers remarkably well. ℞ Mist. Guaiaci Cœ. ad ʒ ij.; Potassii Iodidi, gr. x.; Potassæ Bicarb., ʒss.; Quinine, gr. ij.; M p. Haustus ter die sumendus (if properly pre-

* See *Lancet*, Feb. 14, 1880.

pared the quinine is held in suspension). The sulphur electuary, with guaiacum, is also a very useful remedy in the cases I have just described, and also in those cases where the bowels are inactive, and scybalous masses of fæcal matter are retained, which irritate the nerves of the lumbar and sacral plexus, and frequently give rise to sciatica and other neuralgic affections of the lower limbs.

SPECIAL NEURALGIAS,

WITH

Cases to Exemplify their Curative Treatment.

HEADACHES.

Headache.—I do not intend to treat the general question of headache here, as volumes might be written without much difficulty upon the subject. Yet there are *headaches* of a purely *nervous origin* (neuralgic), which, in reference to their curative treatment, cannot be passed over without notice. How vainly, I am sorry to say, in many instances, have I endeavoured to persuade my patients that their *headache* has not been due to *biliousness*. *Certain headaches*, commonly, but most wrongly, and incorrectly, termed '*Bilious headaches*' and '*Stomach headaches*' have never been rightly understood by the public, nor have they always been rightly and properly considered and treated even by many practitioners of medicine. Hence it is a most difficult task, but in some cases a most important and necessary task, to disabuse patients of the idea that their livers and stomachs are not really at fault, and to convince them that drastic purges and quack pills are doing in a large majority of cases an infinite amount of harm. *Headaches* may be of the most significant and vital importance. They may be the forerunners of most serious changes in the brain. Yet, on the other hand, in some instances, they are so chronic and purely functional in their nature, that many persons suffer from habitual headache for many years, and not unquietly for the best part of their lives. However, let this be as it

may, *a headache should never be neglected.* If I may be allowed to judge from what I have seen and heard, and I feel quite confident that I am right in making the statement, more differences of opinion exist in regard to prognosis amongst the medical profession concerning headaches, than concerning any other disease. My late gifted clinical teacher, Dr. Salter, now nearly twenty years ago, used to impress upon me the importance of always giving a guarded opinion as to what might be the consequences of certain forms of headache, and his advice has been of the greatest service to me upon more than one occasion. It has happened to me in my practice, at various times, to differ with my professional brethren relating to this matter, and in every instance I have never had occasion to regret my reservation about this question. *Nervous headaches undoubtedly belong to that class of headache which demands our most careful scrutiny. The persistency or periodicity; the precise nature and locality of the pain, its circumscribed or diffuse character, its relief by pressure, by hot or cold applications; the involvement of the special senses; the variability or continuity of the temperature of the head in relation to the body generally, but especially to the feet and lower limbs, also the relief or not of the pain according to the position of the body; the character of the pulse, tongue, secretions and excretions; the nature of the vomiting and giddiness, if there be any; as well as age and hereditary predisposition—all these are points which demand the utmost attention and consideration.* However, I cannot possibly enter into a detailed statement of any one of the signs or symptoms, or single out one which is of more importance than another, for they are all of them important, and must be carefully studied.

There is no pain that can equal in intensity, neuralgia of the brain itself. In more than one instance which has come under my immediate observation, *death has resulted from pain*—in other words, *the pain killed the patient.*

CASE XXXII.—DEATH FROM PAIN.

‘Some years ago, a lad of about 12 years of age was admitted into the Central London Sick Asylum at Highgate under my care. He was extremely pale, and walked with a staggering gait; the

eye was dull, the pupil dilated; light was well borne, and he seemed quite indifferent to what was going on around him; his hands were constantly pressed upon the head, and he frequently grasped the hair and pulled at it as though in agony. His mother, who accompanied him, stated that a fortnight before his admission he complained of ear-ache, which did not confine itself to one ear, but moved about from one to the other, and seemed to shoot through the head. Her remark was: "That she never saw a child suffer so much pain;" sometimes it would leave him for a few hours, and then return with increased violence. *The pain, she stated, had nearly worn him out.* He had been unable to take food, and sleep he had not known for many days and nights. He was at once put to bed, and a draught of hot brandy and milk was given to him, and the head (which was cold, like the rest of the body) was enveloped in hot water fomentations. In an hour from this time he was dead. The post-mortem examination was made with the most searching care, and *nothing whatever could be detected to account for death.* The brain and its membranes, and the cavities of the middle and internal ear, were pale and bloodless, but otherwise these parts, which were associated with such severe pain, were quite healthy.'

The case made a great impression upon me at the time, and I was convinced, as I am now, that the poor lad had died from complete inertia of the nervous centres, and from failure of nerve power to keep the heart in action.

A somewhat similar case occurred in my practice not long ago.

CASE XXXIII.—NEURALGIA OF THE BRAIN, CURED BY QUININE, ETC.

I was called in the month of June, 1879, to see a young lady, 23 years of age, of fair complexion, very thin, and subject to fits of restlessness and depression, and who had been under medical treatment for some years for attacks of severe headache, which were said to be hysterical. When I saw her, she had just returned from Brighton, whither she had been sent for change. I saw her during one of the attacks, and I at once stated my firm belief that the attacks of headache were not due to hysteria, neither were they due to anæmia. There was no malarial cause that I could make out, but she had suffered some two or three years before from rheumatic fever, and since then she had frequently complained of pains in the joints. The headache came on regularly

about seven o'clock at night, almost immediately after dinner ; her friends were greatly frightened, as she would jump up suddenly and put both her hands to her head, and scream with the agony of the pain, which she compared to red-hot knives darting through her head. The attack usually lasted from two to three hours, when she had to be carried to bed completely prostrate. There was no increased temperature of the head, no congestion of the vessels of the face or the eyes. There was slight tenderness upon pressure over the scalp, and after the attack she complained of some parts of the body feeling cold and numb, and, for instance, the ring and little fingers would usually be devoid of feeling. I felt sure the case was one of brain neuralgia, which to my mind was as clear as a sciatica or tic douloureux. I gave her 10 grs. of quinine, which cut short the attack immediately, ordered her a mixture of steel, strychnine, sulph. of magnesia and quinine to be taken three times a day, and a tablespoonful of cod-liver oil at bedtime, and I completely changed her dietary. She had been ordered never to take stimulants, and she was quite sure that her head would not stand anything of the kind. However, I insisted, and her head did stand a tumbler of stout at two o'clock in the afternoon, and at ten o'clock at night. The dinner-hour was altered to the middle of the day, but nourishment was given, such as milk, eggs, cream, good soup, etc., at frequent intervals ; the blood improved, she made flesh, the nervous centres became properly nourished, and the neuralgic headaches deserted her.'

A large number of nerve headaches are unquestionably due to commencing and advancing changes in the structure of the brain itself or its membranes, and I know of no special signs, unfortunately, by which these incipient degrees of brain-change can, to the uninitiated, be distinguished from those of a mere functional character, without going into an immense amount of detail ; but the following cases which have been under my care will, in all probability, explain my meaning :

CASE XXXIV.—PERSISTENT HEADACHE, DUE TO UNRECOGNISED HEART-DISEASE.

'Some twelve months ago a gentleman came to consult me on account of the severe attacks of pain from which he suffered behind the ears and at the back of the head ; he frequently became giddy, and felt sick and faint, and momentarily became confused

and lost himself. At times he became suddenly giddy without pain. The pain itself was sometimes acute and persistent, at other times it gave him a kind of shock, and he momentarily lost his eyesight. At one time the pain was so severe that he vomited. With every attack he became extremely pale, and after several attacks he felt that he had lost power in his arms for a short time, and upon another occasion he thought his speech was a little affected. He found that a little brandy-and-water did him most good, but he had consulted many medical men, who had applied blisters and used various remedies, which had been of no essential service to him. He was a fair man, and had suffered from pains in his joints. The urine was free from albumen. He denied having suffered from shortness of breath, yet, after consideration, he thought that he could not mount the stairs quite as well as he used to do. His pulse gave evidence of increased vascular tension, and a fine, scarcely audible, diastolic murmur was heard over the aortic valves to the right of the sternum. It was not easy to persuade this gentleman that his head-troubles arose from an *unhealthy condition of his heart*, and that they were really due to a defective condition of the valves, which prevented the sustained action of the heart to propel the blood through the brain; and I assured him that his head-symptoms would pass off, but I could not tell him that his heart would become cured. He has been under my care ever since, and compensation has been established between the peripheral and central circulation. The administration of steel, strychnine, and digitalis cured his headache at once, but in other respects his condition is the same.

CASE XXXV.—SEVERE NEURALGIC HEADACHE OF A SPECIFIC CHARACTER, CURED BY IODIDE OF POTASSIUM AND BICHLORIDE OF MERCURY.

‘A gentleman, aged 42, attached to a well-known regiment, and who had been in every quarter of the globe, consulted me in the spring of the year, almost immediately after his return from India, for pains in the head somewhat similar to those described in the last case, with the exception, however, that they were more severe, and of longer duration, and were always much worse at night. He said that his general health until the past twelvemonths had been excellent, but that of late he had been losing flesh and his memory had begun to fail. The pains would come on suddenly about six o'clock in the evening, and last well on to midnight or even early morning, leaving his head sore to the touch. After

this he slept fairly well for some hours, but his sleep did not seem natural, and when he got out of bed he felt giddy, stupid, and confused. As the morning wore on he became more himself, and would be first-rate at night, but for the agonising headaches. He felt sure that he had something the matter with his heart, for his father died of heart-disease when about his age, and for some time he had been losing his breath upon any great exertion, and at times he suffered from palpitation upon exertion. I went carefully through his symptoms. He was a tall, well-made man, very pale, and the superficial arteries were unduly visible. There was a diffuse optic neuritis, and, as in the case of the other patient, he occasionally felt a weakness in the limbs. I commenced by telling him that his heart was sound, but that the vessels of his brain were unhealthy and undergoing a specific change, which his evidence went to corroborate no less than the treatment. I ordered him $\frac{1}{2}$ gr. of bichloride of mercury three times a day and 1 scr. of iodide of potassium every night. After this his headache soon left him, and in six weeks his cerebral symptoms also. I see him occasionally, but up to the present time there has been no return of the headaches.'

CASE XXXVI.—RHEUMATIC NEURALGIA OF BRAIN.

'H. P., aged 33, was admitted into the Central London Sick Asylum under my care upon several occasions, suffering much in the same way each time. He was a stout, strongly built labourer, and subject to frequent attacks of acute rheumatism. On the 16th June, 1874, I found him in the ward rolling about the bed on account of the burning and tearing pain which he felt more or less all over the head. The attack commenced with furred tongue, shivering, vomiting, constipation of the bowels, and slow laboured pulse. There was no marked increase of temperature either of the body or of the head, and no intolerance of light or sound. The attack would sometimes last for four or five days, and, from an apparently serious condition, the joints would become painful, but not swollen, and the severe head-symptoms would subside in direct ratio. It was really astonishing to note in this case the alternation betwixt the pain in the head and the pain in the joints. So much was this the case, that the nurse would say, "It is the head to-day, doctor," or, "It is the joints to-day, doctor," just as the case might be. At times his condition would be alarming, the intellect would be confused, and he would cry out that his head was on fire. Upon one occasion he had paroxysms

of delirium, delusions, and hallucinations, but the most remarkable point in connection with these attacks was their sudden appearance and equally sudden departure. In regard to treatment, no medicine did him so much good as the disulphate of quinine.*

I have quoted these few cases to demonstrate how extremely difficult it is, at times, to make ourselves sure of the precise nature of the headache with which we have to deal, unless we are guided by extended experience. It is a rare circumstance for a patient to be seized with paralysis, and unusual for a patient to have a fit of apoplexy without previous headache, varying in severity and of long or short duration. *'A persistent headache of two, three, or four weeks, or more, must always be looked upon with the gravest suspicion.'*

'How often,' exclaims Dr. Marshall Hall, 'would due attention to "headache," and similar warning affections, ward off the more formidable attacks of apoplexy, or of epilepsy, yes, and of mania !' *

Nervous Headaches, apart from headaches caused by organic disease of the brain or its coverings, are due, in nine cases out of ten, to deficiency of nervous power, to morbid inactivity of the nervous centres and the brain cells, and to suspension of those formative processes which regulate and administer to the nutrition of the brain, and which adapt the working power of the brain to its several requirements. We very naturally ask ourselves the question, What is it that brings on this unhealthy state of things? For although nervous headaches are indisputably the hereditary property of the nervous temperament, yet we find them commonly enough in those persons who are not of an essentially nervous temperament. There are three main causes of the common ordinary nervous headaches (apart from toxic causes, as gout, rheumatism, syphilis, uræmia, ischæmia, septicæmia, malaria, exanthemata, etc.); namely, 1. *A deficiency of blood in the brain (anæmia)*; 2. *An excess of blood in the brain (hyperæmia, or congestion)*; and 3. *Apart from these conditions, a deficiency of*

* 'Essays on the Theory of Paroxysmal Diseases,' § 6, 1849.

nerve-power. We will consider each of these conditions separately. For many years I have repudiated the stereotyped doctrines laid down by physicians in some of our handbooks of medicine relative to the signs by which a bloodless and an over-blooded brain are to be recognised during life. *Pathology has over and over again convinced me of the unsoundness of many of these doctrines.* I am not referring to acute inflammations of the brain, but only to the congested brain. The general pallor of the face is certainly, not of itself, a sufficient indication to lead us to the conclusion that the brain participates in the bloodless condition; neither, on the other hand, are we right in surmising that the florid complexion carries with it a similarly conditioned brain. However, in these opposite conditions of bloodless and congested states of the brain, we have always to consider the working-power of the heart before we begin to examine the inherent circulation of the brain at all.

Neuralgic Headaches due to a Bloodless Brain.—When the headache is due to this cause, we usually find the pain to expend itself upon both sides of the head alike, and especially over the brow and the temples; sometimes it is most acute, at others the patient merely feels as though a band of iron were fixed around the head. Perhaps the best test of this kind of headache is the great relief which is experienced by the patient lying down; consequently, with regard to headaches in general, let me say, that the first question which I usually put to my patients is: *Does your headache diminish in severity when you lie down?* Should it be so, we then have some amount of evidence to guide us, that the brain is more or less anæmic. This kind of headache is essentially a *woman's headache*, and is usually accompanied by *general pallor, tendency to giddiness and fainting, weariness and lassitude, perversion of temper, coldness and numbness of the extremities, irregular action of the bowels, sometimes constipated, at other times relaxed, dyspepsia, palpitation of the heart, loss of breath upon exertion, and feeling of inability to take a deep breath or to expand the chest, irregularity (increased or suspended) of the monthly*

flow, sense of burning under the left breast, as well as indifference to conform to the routine duties of daily life. These are all more or less signs which are associated with this especial form of headache. But of all kinds of headaches, they are unquestionably the most easy of cure. The cure, in fact, being merely a question of hygiene, laxative saline aperients, the salts of iron, and an assimilable and easily digested form of dietary. Yet many cases have come under my care for treatment which have failed to receive benefit from the hands of others. I am quite sure that it is a great mistake to expect that iron alone will cure these cases, without paying due attention to other points. There are some persons who seem to think that Easton's syrup will do everything. A young lady consulted me not long ago for this especial form of headache, and when I was about to write the prescription, her mother, thinking, I suppose, that I was going to order her Easton's syrup, said: 'My daughter, sir, has been taking Easton's syrup for the last three months!' Women who suffer from these headaches will not unfrequently have congestion of the pelvic viscera (the uterus and the ovaries) at the same time, and although the face is blanched, the veins of the lower bowel will be often engorged. Now, what good, may I ask, is iron or Easton's syrup alone to do under these circumstances? I say they are simply poisonous. The following case came under my observation last summer:

CASE XXXVII.—NEURALGIC HEADACHE, DUE TO A BLOODLESS BRAIN.

'A married lady, aged 28, who had been married only two years, and was without child, consulted me concerning her headache and nervous symptoms generally. She was excessively pale, and said that the least excitement flew to her head, and gave her the most uncontrollable headaches, and that if she had not the headaches or feelings of faintness, she would have an attack of diarrhoea. Her appetite was very indifferent, so much so, that at times she loathed her food, and anything she took, it mattered not what it was, invariably gave her great pain over the stomach. She complained of being low spirited and depressed, and of

suffering much from cold feet and hands. In her younger days she suffered from vomiting of blood. Menstruation was imperfect, and accompanied with great pain. There was tenderness down the spine upon pressure, and the bowels were distended and even tympanitic. She said that when the headache came on, her greatest relief was to throw herself upon the bed and bury her head in the pillow. Upon listening to the heart, there was a soft blowing systolic murmur heard over the aortic valves and carried into the carotids; the conjunctiva was of pearly whiteness, and the pulse was small, and quick and soft. She had been to many physicians, and of late had been taking Wyeth's dialyzed iron; but still her headaches continued. I prescribed a mixture, each dose consisting of 7 drops of the solution of strychnia, 2 drops of liq. arsenicalis, and 1 drop of solution of atropia, in water, three times a day, immediately after her meals, and 1 oz. of Griffith's mixture, with 2 drs. of potassic tartrate of soda, at eleven o'clock every morning, in half a tumbler of water, as well as one tablespoonful of cod-liver oil at bedtime. I applied twice a week the continuous galvanic current to the spine. She thought my treatment somewhat heroic, but in a fortnight her whole condition was not only apparently, but actually, changed. In a month she was free from headache, and had increased a stone in weight. I need scarcely add that her dietary was carefully attended to, and port wine was taken, a wine-glassful at lunch, and two at dinner.'

CASE XXXVIII.—NEURALGIC HEADACHE, DUE TO AN OVERWROUGHT AND EXHAUSTED BRAIN.

'A young lady, 14 years of age, was brought to me by her mother, who told me that her daughter had been suffering severely from headaches for more than twelve months; they usually came on in the morning, sometimes before breakfast, but more frequently about eleven o'clock. She had menstruated upon one occasion only, and that was just about the time that the headaches first began. She was morbidly fond of reading and study, and was then working for an examination. She cared nothing for the society of other children about her own age; *all that she seemed to care for was her books and her own society.* She was tall for her age, and growing rapidly; the extreme pallor of her cheeks and lips was most striking, and there was slight lateral deviation of the spine. For some weeks she had been troubled with a dry, harsh cough, which increased the pain of the head. The bowels were

obstinately confined, and she would go without food for days together, unless made to eat. Towards night she would sometimes brighten up, and become more cheerful. She had been taking steel and cod-liver oil for some months, without any improvement; in fact, she was getting worse. I told the mother that the nature of the case was quite clear, and that there was only one course open by which her health could be restored. That the headaches were due to a bloodless and over-wrought brain was certain. It was, in fact, one of those cases which are not so uncommon nowadays, where young girls are permitted to exhaust their nervous systems by over-work, and their minds become morbidly active, whilst their bodies and bodily functions become morbidly inactive. One physician whom she had consulted recommended cold shower-baths and a walk before breakfast, after which some stimulant embrocation was to be rubbed into the spine. Another physician had recommended her a spinal support. The mother, like a sensible woman, said that she was tired of doctors, but would do anything I directed. In a month the girl was a different being. I ordered her to be deprived of all books, to take 5 drops of solution of strychnine three times a day, and half a drop of croton oil every third morning; to use dumb-bells, and walk an increasing distance every day, but *not to over-fatigue herself in any way*. In less than a month her headache had left her, and she slept soundly: previously to this her sleep had been greatly disturbed.

Neuralgic Headaches due to a Congested Brain.—This form of headache is far more common than the variety which we have just referred to. It may be met with at any age, but it is more frequent in the middle and advancing periods of life. There is also a distinct form of headache due to a hyperæmia of the brain, but for our present purpose the two kinds of congestion may be considered together, although I am fully aware that the most severe forms of neuralgic headache are, in fact, rather associated with the over-blooded active brain than with the simple congested, dull, heavy and lethargic brain. Now although this kind of headache is not confined especially to one part of the head, yet it invariably takes the anterior three-fourths of the head, and it is not an uncommon occurrence for the pain to commence behind the ears, or at the back of the head, or in one half of the head alone,

or even the whole head may be affected. *It is usually accompanied by irritability of temper, or even moroseness; the pain is fixed, aching, pulsating and throbbing; there is usually a feeling of pressure, as though the head were made of wood or lead—in fact, as though the head were distinct from the body. This sense of pressure and weight in the head is a marked feature.* The eyes and face may be suffused, or they may not. Some physicians lay great stress upon this sign, but my own experience leads me very much to doubt its value. In the sub-acute inflammatory engorgement of the vessels of the brain, associated with gout, kidney-disease, and a weak action of the heart, we have, of course, the colour of the face, and the general engorgement of the circulation of the upper extremities. But this is a form of congestive headache quite apart from my subject, and not associated with this treatise in any way. This form of headache is undoubtedly influenced by the posture of the body, but not so much so as many are led to suppose. The activity of the brain, that is of the mind, can be measured from the amount of blood circulating through it. Cases are on record where the mind of an individual has been so influenced by the amount of blood passing through the brain, that in order to work out a definite scientific problem correctly, he has been compelled to do it in a recumbent position, and by so doing his brain became more consistently active, and his ideas more comprehensive and exact. I have been told that this was the case with the late Count Cavour. Let us consider the signs of an *over-blooded brain* somewhat more accurately. 1. *The faculties of the mind are invariably impaired, and the most determined characters become weak and vacillating. Acts are performed by men and women of previously sound judgment, without decision or even reason. Hesitation, fearfulness, and a feeling of undue responsibility, with the full knowledge of these defects, are intimately associated with an engorged brain. Defect of memory is rarely if ever present. When the memory becomes defective we then have a sign of the most serious significance, namely, that the brain substance is become ill nourished, and seriously damaged by the extra pressure which the engorged vessels have been exercising upon it.* 2. *The emotional system is deeply*

affected, and the most quiet and placid temperament becomes changed ; evil passions, which previously were scarcely known and much less thought of, now manifest themselves in the mental disruption ; slight exciting causes bring forth the most passionate expressions, even towards those whom in reality they hold most dear, and whose love and good feeling they have hitherto striven to cherish at any cost. Persons so afflicted are peevish, fretful, suspicious and distrustful. To endeavour to please such is only to annoy them ; they will neither be led nor driven ; they have no decided will of their own, neither will they admit any superiority in the powers of others. They avoid anything like social intercourse, and are jealous of the pleasures of others. Some retire from the busy scene of life in disgust, whilst others rush into the wildest scenes of dissipation, until through despair they attempt to put an end to their existence. Sleep of a natural and refreshing kind is to them a thing unknown. In some severe cases of cerebral congestion, which I have had under my care, from over-work, over-study, worry, shock, or some severe mental strain, the patients' waking moments have been of the most distressing, I might almost say, heartrending kind. One lady, whom I had under my care, would put her hand to her head and exclaim : ' Where am I ? What have I been doing ? Everything seems contorted ! Oh, if you only knew the whirl and confusion of my poor brain ! ' and so on. One very important and significant sign of this disease is the intense selfishness which by degrees becomes created, and although everything then be done to please such people, and everything must be done for them, still nothing pleases. Their attention not only appears to be, but is, entirely fixed upon themselves ; and their necessities, their requirements, their likes and dislikes, their aches, their pains are exaggerated (unconsciously) to such an extent as to be beyond all rational conjecture. Sometimes this condition even goes so far as to excite illusions, hallucinations or even delusions, and causes the subjects of it to entertain a morbid apprehension that some direful calamity awaits them. One gentleman so suffering, could not possibly be persuaded to enter a railway-carriage, through fear that if he did he should surely come to grief in one way or another. A lady, whilst under my care, could not

be persuaded to cross a bridge, for if she did she felt quite sure she should jump into the water. It is often the case, in rather chronic congestions of the brain, that patients will exhibit all or most of the signs just enumerated in the day-time, but in the evening the irritability of mind and irritability of body will pass off, and give place to a state which is very comforting to the patients' friends, and even to the patients themselves.

Wakefulness and abnormal *perceptiveness* are, in the majority of instances, the first signs of cerebral disturbance. Many of my patients have repeatedly said to me, 'How is it, doctor, that I cannot sleep? Until now I have been such a splendid sleeper. I would drop off to sleep directly my head was down upon the pillow, and never wake until I was called in the morning; and now see the change: I wake at two, three, or four o'clock, as the case may be, and my body and mind are so irritable that I cannot rest, and I know it is of no use getting up, for I cannot fix my attention on anything; and so I am compelled to pass the wearying and agonising hours of wakefulness rolling about the bed, harassed by the most distressing thoughts, until the time comes to rise, and one gets up feverish, unrefreshed, and totally unfit for business of any sort or kind.'

The special senses of smell, sight, hearing, and even taste and touch, are perverted; the intolerance to light, with flashes before the eyes and dark spots, is a very marked symptom with some, whilst in others there is the same intolerance to sound. One lady who was under my care declared that the ticking of the clock was to her as though a cannon were being constantly fired off in the room, and that the rustlings of a silk dress were like so many waterfalls near her. Strange noises in the head, sometimes roaring, hissing, and so on, are very common indications of chronic congestion of the brain, although patients can scarcely be persuaded that their ears are not at fault. The taste is sometimes changed, but this is rarely the case. The change in the sense of touch and the sensation of feeling is variable and even abnormal. Heat and cold are frequently not appreciated, and imaginary ideas in reference to the temperature and even the position of the limbs may

exist. Giddiness is often an attendant sign, and upon first getting out of bed in the morning it is frequently most marked, and even whilst lying in bed the patient will complain of the room going round ; but the feeling of giddiness which generally arises is due to the effect of change from one position to another,—even rising from the chair is sufficient in some cases to bring it on. Patients will often stagger, become tottering, and even shaky upon their legs, and put their hands to their heads in the hope by the pressure to effect a maintenance of the equilibrium. In association with these head-symptoms we find other subjective symptoms, the chief of which, however, is an irregular and constipated condition of the bowels, and until the congestion of the brain is relieved it is impossible to hope for a regular action of the bowels. The breathing may be irregular and superficial, whilst the heart's action will be slow, laboured, and at times intermittent. These, then, are some of the signs of a congested (hyperæmic) brain ; and in treating of them I have, I hope, considered exactitude rather than tedious detail. To sum up these signs and symptoms of congestive neuralgic headache and irritability and excitement of the brain, we find : 1. A wakefulness and a want of natural sleep ; 2. Pain ; 3. Irritability and impulsiveness ; 4. An undue excitation and perversion of the special senses ; 5. Giddiness ; 6. Constipated bowels ; 7. Coldness of the extremities, and particularly of the feet ; 8. A feeling of heaviness of the head, and yet a sense of lightness in reference to the body—patients will say that they feel as though they were walking upon india-rubber, and that sometimes, in addition to this numby sensation, there is a strange feeling of heat and a gritty sensation in walking, as though the soles of the feet were coming into contact with sand ; 9. And perhaps the most important point, and one which demands immediate attention, is the *feeling of stiffness* about the limbs and the rapid fatigue from any sustained muscular effort, and also an inability to close the fist, from a feeling of stiffness about the fingers.

CASE XXXIX.—CONGESTIVE NEURALGIC HEADACHE,
LEADING ON TO APOPLEXY.

'In the spring of 1879, a gentleman, aged 54, consulted me for severe neuralgic pains, which ran up the back of the head and neck, and these neuralgic pains alternated with severe frontal headache. That he had cerebral congestion there was no doubt whatever, and to go over his symptoms would be merely to recapitulate what I have just stated; but what I wish to call attention to in this case is the sense of weariness and stiffness that he experienced in the limbs upon the least exertion. He said that the arms and the legs had rapidly become wonderfully developed, and that, instead of being soft, they were unusually hard and tense; yet, when he flexed the arm or bent the leg, there was a feeling of stiffness and pain, not in the joint, but on the soft parts at the seat of flexion. There was the same feeling in the muscles of the neck. He remarked that he was unable to brush his hair, because the muscular effort seemed too much for him, and he had to throw down the brushes because his arms ached and felt so stiff and tired. He could not account for it, but I told him that the attack was, in all probability, due, in the first instance, to rapid atmospheric changes, to which his circulation could not well accommodate itself. He was a bachelor—what is called a club man—suffered from attacks of gout, and lived freely. His heart was acting slowly, and his pulse was laboured and intermittent. I told him that I had no desire to frighten him, but that I thought him much more seriously ill than he imagined he was, and that if I had my way with him I would bleed him there and then. He laughed, and said it was the doctor's business to take a serious view of things, and he then put the question, "Well! and what is really the matter with me?" I told him that his brain was engorged to bursting, and, unless prompt measures were taken, he would have a fit of apoplexy. I cautioned him that if he became in any way worse to send immediately for his medical attendant. I prescribed for him a 3 gr. calomel pill and a bromide of potass and ergot mixture, but in the evening he became unconscious and lost the use of his right side, but, fortunately for him, he did not lose his life.'

It is usually the case that when a vessel of the brain ruptures, under a strain such as I have just described, the disruption of brain tissue is so great that the patient very rarely, if ever, rallies from it.

Hence it is a worthy motto to be followed in cases like these—‘A stitch in time saves nine.’ There is no time to be lost, and a few hours may be sufficient to save life or to destroy it. I have quoted this case to instance the foregoing observations.

Fortunately the larger number of cerebral congestions, and especially those in association with neuralgic headache, are not of this severe form; but they are frequently chronic with women just about the change of life, and often lead to mental aberration and melancholia, with fits of almost uncontrollable excitement. In the year 1876 I had a lady patient living in my house, who suffered from this form of congestive brain, with intense neuralgic headaches.

CASE XL.—CONGESTIVE NEURALGIC HEADACHE, CURED BY THE BROMIDE OF POTASSIUM AND DIGITALIS.

‘She was over 50 years of age, and the mother of a large family. Her health, until this period of change, was excellent. At this time, however, she became depressed and irritable, unsociable, and careless about herself and her belongings. About the monthly time her melancholy changed to excitement—that is to say, the passive congestion of her brain became an active hyperæmia; the face then became flushed, the head intensely hot, and the arteries beating away forcibly; she would cry out and scream through the intense throbbing pain in the head and neuralgia at the back of the neck and head; her breathing would be hurried and superficial, almost panting, and she would cry out for water, and say that she would die of suffocation. At times she had both hallucinations and delusions. These attacks usually lasted only for a few hours, and were best relieved by a dose of croton oil and a hypodermic injection of $\frac{1}{2}$ gr. of morphia. Between these attacks of excitement she exhibited most of the signs and symptoms which have been just discussed. She was a strong and well-made woman, with no sign of organic disease. I applied the continuous current to the back of the head and spine, and gave her digitalis, ergot, and bromide of potassium three times a day; the monthly attacks became less until they ceased altogether; and at the end of nine months she was quite well.’

Amongst other causes of congestive neuralgic headaches, we have *shock*, *over-work*, and *prolonged mental effort*; but, as Dr. Ham-

mond * so accurately points out, 'still more common are those instances in which some powerful emotion, acting day by day, and even night by night, slowly perhaps, but with terrible certainty, leads to the more or less permanent increase of intracranial arterial blood, with all the inseparable phenomena.' Cases such as these are of constant occurrence, both in men and women—so common, in fact, are they, that I always was accustomed in my asylum practice (and I continue to do so now in my hospital and private practice) to ask the question: What have you to worry you? In all cases, with very few exceptions, there is something in this respect which helps to account for their congestive neuralgic headaches. Dr. Hammond gives the following very interesting case of cerebral congestion from fright, *loc. cit.*:

CASE XLI.—CEREBRAL CONGESTION, DUE TO FRIGHT.

'A. G., a young lady, aged 18, and in good health, was frightened by a runaway horse, which, dashing furiously down the road along which she was walking, scarcely allowed her time to spring aside and escape injury. She managed to get home, notwithstanding the great mental and physical prostration which immediately succeeded her terror, and after drinking a glass of wine, to all appearance recovered her usual health and equanimity of mind. Previous to her fright she had never been what is called "nervous." Menstruation had begun at fourteen, and had always been regular in every respect. Her appetite also had constantly been excellent, and she was strong and well developed for her age. Her complexion was ruddy, her pulse full and strong, her mind of good quality and of sound and healthy tone, her temper cheerful, and her character remarkable for its strength. But soon after the occurrence of the event referred to, her friends noticed the beginning of a gradual change in these respects, but especially in her susceptibility to nervous impressions. From having been cheerful and buoyant in mind, she became melancholy and depressed, and instead of being open-hearted and free from deceit, she began to show evidences of hypocrisy and even want of truthfulness. At the same time her temper grew irritable and peevish. The slightest sudden noise caused her to start, a bright light disturbed her, the least touch was magnified into a

* Hammond, 'Cerebral Hyperæmia,' 1878, chap. iv. p. 79.

severe blow, she constantly smelt bad odours, and complained that nothing tasted as it did formerly. Her appetite became irregular and capricious. Sometimes she ate voraciously, while at others she would go for several days scarcely eating enough to sustain life. Severe dyspepsia, attended with pain, heartburn, and eructations set in. The bowels were generally constipated, the liver was inactive, the heart palpitated violently upon the least exertion, the skin was dry and harsh, the hair began to fall off, her spine became tender in the cervical and dorsal regions, and her complexion assumed the greenish colour indicative of chlorosis. Dr. Hammond goes on to say: "I was disposed at first to regard it as one of those hysterical affections so frequently met with in young women, and which in some respects it outwardly resembled. I therefore treated it, for the first two or three weeks, with anti-spasmodics and tonics, and recommended nourishing food and moderate physical exercise. As it was, the patient showed no signs of amendment; on the contrary, she gradually grew worse, and a month subsequent to the beginning of her disease, was in a condition from which I was fearful it would be difficult to rescue her." After this she was bled by another physician, who mistook her complaint for disease of the liver. She became gradually weaker, and at last Dr. Hammond had recourse to strychnine and Fowler's solution, which, after six weeks, completed her recovery.'

Cases of this kind are not uncommon, in connection with certain nervous temperaments. We will now briefly consider the treatment of congestive neuralgic headaches.

Treatment.—In the first place we must examine the patient's urine, not once, but upon several occasions, both for albumen, urea, uric acid, and, if need be, for tube casts. Then, if kidney disease be found, nothing will prove of such service as the tincture of perchloride of iron with strychnine, and a full dose of compound scammony powder. If, however, we find the kidneys to be healthy, we should then examine the optic discs, and if an ischæmia or retinitis be discovered, the bichloride of mercury, with iodide of potassium and arsenic, will be found the appropriate remedy; and again, should nothing be found wrong with either kidneys or the retina, then we may look upon the case as essentially nervous provided of course that the arteries and the heart are

healthy. Mustard poultices to the back of the neck, and hot mustard foot-baths, are of great service in the nervous neuralgic congestions of the brain ; so are shower-baths, as hot as they can be borne ; and iodide of potassium, in a full dose of $\frac{1}{4}$ dr. at night, and a mixture of strychnine, sulphate of iron and sulphate of magnesia and ergot three times a day. Stimulants must be forbidden altogether, as well as excitement ; healthy exercise is very important, but must not be carried to fatigue. Some time is required to cure these conditions, but they generally yield if the treatment laid down is persisted in.

Neuralgic Headache due to Nervous Debility or Nervous Exhaustion (Neurasthenic Headache).—This form of headache deserves an especial notice, as it differs altogether, in certain main and important features, from the foregoing forms of headache which we have just had under our observation. It is undoubtedly the accompaniment of general debility of the system, and not due to any especial constitutional cause, although it is in many cases due to excesses of some kind or other. I have always considered that this especial form of neuralgic headache has been due to an *over-demand* upon the store of latent nerve-force which is always laid up to meet the *ordinary* exigencies of life. There is certainly a line of demarcation to be drawn between the *normal* and the *unnatural* or *excessive* expenditure of nerve-power. Doubtless we are constantly taking very grave and serious liberties with the *reserve forces* of our vital economy, yet it produces a drain upon our resources which medical art and the reparative forces of nature are in some instances unable to repair. It is now nearly twenty years ago when this form of nervous headache was first brought under my notice.

CASE XLII.—NEURALGIC HEADACHE FROM NERVOUS EXHAUSTION.

‘I was hurriedly called to see a young lady, who was 19 years of age, and was of a highly nervous and excitable temperament. She had a month before this married a gentleman only twelve months older than herself ; and both of them, when married, were

in the bloom of health and vigour. The young lady was lying upon the bed, and shrieking with agonising pain in the head and in the lower limbs; she said that the head and the legs felt burning; yet the temperature was natural. As far as the complexion was concerned, she looked in perfect health; but her breathing was hurried and panting, the pulse was small, weak, and scarcely perceptible; when asked to raise the arm or the leg, she said they were as heavy as lead, and that she could not move them; the bladder was distended with urine, which I immediately drew off. Her friends were very anxious about her, and a physician was called in consultation, who pronounced it to be a case of hysteria, and that there was no occasion whatever to be alarmed about her. My practice in nervous disease has, since that time, only confirmed the opinion which I then gave, and it was that hysteria had nothing whatever to do with the matter, but that it was nervous exhaustion from which the poor girl was suffering. The headache passed off, and the arms lost their heaviness, but not the legs, and confirmed paralysis of the lower limbs set in, she died about three weeks after. No disease whatever could be found either in the brain or spinal cord, no derangement of nuclei or flattening of nerve-cells. The cause of death was an exhaustion of latent nerve-force, which neither art nor nature could restore.'

This is an extreme case, the like of which does, however, sometimes unfortunately occur. Had this young lady married later in life, when her nervous system had become more stable, in all probability she would have been alive at the present time. This kind of neuralgic headache is almost essentially the headache of youth, and between youth and middle age, when impulse and passion are at their height. So much is this kind of headache due to the unwise expenditure of nerve-force, that we see it often in those individuals whose circulation and digestion are in no way impaired, whose nerves of special sense, such as sight, smell, hearing, taste, and touch, are in no way interfered with, but whose mental faculties are dull, and at the time of the headache there is more or less tenderness all over the head, and a great feeling of weariness and prostration, and to do the slightest thing seems a trouble, and fatigue is easily induced. Wakefulness is not known to these sufferers; in fact, they usually tell the doctor that they are too much inclined for

sleep, and yet they often say that their sleep is disturbed by the most unpleasant dreams. Anything, it matters not what, that produces exhaustion of the nervous system invariably gives rise to this especial form of neuralgic nervous headache. I know a lady who suffers acutely from it whenever she is suckling her children. She is a spare, thin, delicate-looking woman, but her children are remarkably fine and healthy. When she ceases to suckle, the headaches subside. The pain is variable: sometimes it is shooting, sometimes pulsating; but it always seems to be situated deeply in the head; sometimes it is confined to one spot, at other times it seems to be diffused all over the head, and patients complain that the head feels as though it was opening and shutting. It is often associated in women with difficulty of menstruation, and perhaps more so during an excessive menstrual flow; all abnormal discharges, or morbid excitations of whatever kind, induce this form of headache. The over-fatigue and the excessive wear and tear experienced by a young lady, a novice to London life during the so-called season, frequently give rise to nervous exhaustion and to these especial neuralgic headaches. I am told that nervous headaches of this kind were common amongst the young soldiers at the commencement of the campaign in Zululand, on account really of nervous exhaustion, due to the continued anxiety and never-ceasing watchfulness to which they were subjected. In some instances the hair came off plentifully, and in many it turned to grey in a single night.

CASE XLIII.—EXHAUSTIVE NEURALGIC HEADACHE, WITH NOISES IN THE HEAD, CURED BY FARADIZATION, ETC.

‘A gentleman now under my care says the pain in his head is at times agonising. He stated when I first saw him that he had been suffering for over twelve months from constant noises in the ears like the roaring of the sea: sometimes the noises were of a singing character, at other times hissing, or like the screaming whistle of a locomotive engine. (This I cured by faradization direct to the tympanum.) At times he becomes very excited, and rushes out of the house without any fixed purpose. When he is asked to describe the nature of the pain from which he suffers, although he

is a highly intellectual man, he is unable to do so. There is no increased temperature of the head, no congestion of the vessels of the eye, and no kidney or heart disease or arterial change. He says that for some time before these headaches and noises in the head came on he was much worried and distressed about some Egyptian shares, of which he held a large number. He is now fast recovering by the use of arsenic, strychnine, quinine, and bichloride of mercury, and by the application of the continuous current to the nape of the neck every other day.'

Galvanic Treatment.—In all cases of nervous neuralgic headaches, we have to make sure that they are not malarial, and that they are not due to soil or bad drainage. If this be not the case, we then have to find out the exciting cause, which will not as a rule be a very difficult matter, and then, if possible, the cause must be removed, and a good influence must be established. The re-establishment of a healthful standard can only be accomplished by this means. We must strictly enforce rest and quiet both of mind and body, and neurine tonics and galvanism should be administered. In many cases which have come under my care, I find no drugs so useful as opium in small doses, phosphorus, quinine, arsenic, and cod-liver oil. The continuous current, alternately with the faradic, applied to the nape of the neck and the spine, is of the highest value; regular hours for sleep and exercise should be enjoined. The diet should be highly nutritious, and wine may be advantageously given. When these neuralgic headaches are associated with obstinate retching, even when the stomach is empty, I find one drop doses of hydrocyanic acid in *half* a teaspoonful of water very effective. The stereotyped remedies, such as ice, dry champagne, soda-water and milk, creosote and mustard poultices, I have never found to be of much benefit or service.

Megrim, Hemicrania, or Half-Headache, is very frequently more of the neuralgic or nervous type than is generally supposed. I don't mean to say that it is connected or identical with the essentially neuralgic headaches which we have just been considering, because it does not affect those sensory nerves, or

mixed nerves, which are the seats of the intense pain in neuralgia; on the contrary, it is confined more or less to the organic vaso-motor nerves, which control the action of the vessels and the blood-supply. Yet I have seen many patients, the subjects of migraine or half-headache, who have been sufferers from intense neuralgic headaches between the attacks of megrim; and not only is this the case, but patients who suffer from megrim will often say, when giving their family history: 'My brother suffers severely from neuralgia, and my sister from epileptic fits'—so that we have a distinct neurosal history in each case where the treatment is nearly, if not absolutely, identical.*

* Read Liveing 'On Megrim, etc., a contribution to the pathology of nervous storms,' and Day 'On Headache.'

NEURALGIA OF THE EYE.

Oiliary Neuralgia is invariably associated with an over-sensitive state of the retina and intolerance of light. Romberg says: * 'Painful sensations in the eye, which are generally confined to one side, and are excited or increased by the rays of light and by visual efforts, are the characteristic symptoms of this affection.' I am certainly inclined to think, judging from my own experience and from what I have read of the experience of others, that the retina in these cases has not been examined with sufficient care; whether I am right or wrong in my assertion is, of course, questionable. Romberg, *op. cit.*, says that 'an intolerance of light is not due to an excited or hyperæsthetic condition of the optic nerve.' However correct this statement may appear to be, I am inclined to agree with the opinion of Handfield Jones, who gives a very interesting article on 'Retinal Hyperæsthesia' in his comprehensive and excellent work, 'On Functional Nervous Disorders,' and who says: 'I feel it very difficult to think that, when a person finds the ordinary light of day to affect his eyes with a peculiar sense of distress, not ordinary pain, which is only relieved by complete darkness, the retina is not the essential seat of the disorder.' Upon the following point I think observers are agreed: viz. that the most severe cases of intolerance of light are those in which the outer coats of the eye are in a state of irritation and inflammation, and *not* those in which the retina is undergoing inflammatory changes. Mr. Hutchinson has recorded† a case of intense photophobia from acute corneitis in a patient

* Romberg, 'Diseases of the Nervous System,' vol. i., Sydenham Society, 1852.

† Handfield Jones, 'Functional Nervous Disorders.'

perfectly blind, owing to white atrophy of the optic nerves. Mr. Wells cites from Mooren an extraordinary case, in which the sensibility of the retina was so greatly increased that the patient could read large print in the dark, in which a normal eye could not distinguish a letter. Of course, an intense intolerance of light, even with severe pain, when accompanied with an inflamed eye, whether it be due to scrofula or to any other cause, can scarcely be called a neuralgia. Romberg, *op. cit.*, says that this form of neuralgia is brought on by scrofular discharges, and especially by seminal emissions, anæmia and hysteria. Scelberg Wells, in his valuable work on 'Diseases of the Eye,' speaks of an over-sensitive state of the retina as an independent morbid state occurring generally in young persons, especially in females of a very excitable nervous and hysterical temperament, and in persons of delicate and feeble health. All physicians who have had any experience of those diseases which are due to an impaired nutrition and to an unstable condition of the nervous system will be able to unhesitatingly agree with Mr. Wells. From an analysis of over one hundred cases of neuralgia of the eye with persistent intolerance of light, colour-blindness and visual vagaries, such as showers of stars falling before the eyes, dark spots floating before the eyes, and rings of various hue and colour rhythmically diverging and converging towards the eye, half vision and so on, I have found that these have been usually associated with a family history not only of hereditary nervous troubles, but of actual organic nerve change in some of the relatives, although in the patients themselves nothing whatever wrong can be detected in the structures of the eye. The most severe forms of neuralgia of the eye are frequently found to be associated with some neuralgic affection of the fifth nerve. I have seen a severe neuralgia of the eye-ball, with a neuralgia of the fifth nerve and a paralysis of the seventh nerve upon the same side of the face, and with paralysis of the nerves governing circulation and nutrition. My experience leads me to the conclusion that in the majority of cases these conditions of intolerance of light, with neuralgic pains passing through the eye-balls, are essentially of a nervous character. We must, however,

be very careful not to fall into error in this respect, and to consider these states as merely morbid, when they may be really due to some serious and advancing inflammatory brain changes. I have known mistakes of this kind to occur. *The nature of the pain* in these cases of neuralgia is extremely variable. At times some patients will complain of a dull aching pain through the eyeballs, succeeded every now and again with a darting lightning-like pain through the temples; other patients will complain of a feeling of grittiness in the eye, and a burning sensation, as though the eye were too hot, and other patients again will say that the eyes feel as though they were on fire. I have seen a patient in apparently the greatest agony with a paroxysm of neuralgia of the eyeballs, and with absolute intolerance of light and a minutely contracted pupil, quite suddenly relieved of all her symptoms by being informed of some distressing news, which acted as a 'revulsive' to her nervous system. A lady who has frequently consulted me on account of her nervous symptoms, with intolerance of light and neuralgic pains of the eyeballs, and a feeling of weariness and heaviness in them, can be made to bear light without difficulty, if her attention is suddenly drawn to, and concentrated upon something apart from her photophobia. Mr. Wells gives the following very interesting case in his treatise on 'Diseases of the Eye': 'A little girl was suffering with an ulcer on each cornea and intense photophobia. Her mother had never seen her open her eyes for fourteen days. She kept the lids screwed up, and the face held down. One day she was out walking with her sister, and keeping her eyes closed, fell into a hole and was much frightened. For six hours after the fright she kept her eyes wide open; then the photophobia returned with the same intensity as before.'

Treatment.—In the neuralgic intolerance of light which we find in the young who are pale and anæmic, we observe a train of symptoms very different to those which we find in persons of the middle period of life who appear to be suffering in a somewhat similar manner; and a form of treatment is required for the one which would be inappropriate to the other. In the cases of

photophobia associated with amenorrhœa, anæmia, chlorosis and symptoms of hysteria in the young, I have always found that purges, with an alterative mercurial course, have been of the greatest value. Dr. Mackenzie recommends the use of tartar emetic as a sedative, and he says: 'There is perhaps no remedy in the whole materia medica which possesses equal powers. I am inclined, however, to adhere to the more tonic form of treatment, such as quinine and belladonna. Aconite is sometimes very useful in these cases, and so is counter-irritation applied behind the ears, either in the form of a blister or a seton. It will be found that a seton applied to the temple, or behind the ear, or to the back of the neck, will relieve a neuralgic photophobia when all other remedies have signally failed. When, however, this form of neuralgia is persistent, which it is in women of middle age at the climacteric period of life, the cure will often be a question of time, and many remedies will sometimes have to be tried before any good can be effected. It is impossible to lay down any direct or absolute rule for the treatment of such cases as these. In my experience local remedies are of little or no value, and the treatment will have to be based upon constitutional and common-sense principles. The guiding principle, however, should be to promote nutrition and encourage a healthy reaction of the nervous centres; every means must be adopted to prevent the condition from becoming morbid, and patients must be roused in every possible way from the apathetic state into which they are prone to fall.

NEURALGIAS OF THE THROAT.

Neuralgias of the Larynx.—These are very rarely indeed of purely local origin, and I have been able to find but few true cases of this kind which have been recorded. Nervous affections of the larynx are common in nervous and hysterical subjects, and particularly amongst women; but sympathetic nervous affections of the throat are much more frequent, than of the larynx alone, in persons of both sexes, who are of a highly nervous and emotional temperament. I have nothing, however, to do with emotional neuroses in the consideration of neuralgias, so that paralysis of the vocal muscles, loss of voice, and absence of normal sensibility about the throat must be reserved for future consideration in another place. Handfield Jones * cites, from Graves, a case of neuralgia of the larynx occurring in a young lady originally of a vigorous constitution, but latterly suffering from menstrual irregularity and hysteria. The pain had become almost constant under antiphlogistic treatment, but was by no means violent, except now and then, when it used to be suddenly aggravated. The paroxysms amounted to a most annoying feeling of distress about the whole region of the larynx. There was no external tenderness, and the internal fauces were healthy. 'This neuralgia,' says Graves, 'was remarkable for a change of tone and weakness in the voice, which invariably attended the paroxysm. The employment of tonics, carbonate of iron, quinine and arsenic, had the effect of rendering the attacks perfectly periodic. At ten a.m. every morning, to the minute, the paroxysm commenced. The doses were increased, but the disorder was little ameliorated.'

* Handfield Jones, 'Functional Nervous Disorders,' p. 623.

I remember a case somewhat similar to this which occurred in my practice at the Sick Asylum at Highgate.

CASE XLIV.—NEURALGIA OF THE LARYNX, CURED BY AN EMETIC.

‘I was called hurriedly about eleven p.m. to see a young lad of about 19 years of age, who was said to be choking. When I saw him he was sitting up in bed, with his hand grasping his throat, and unable to speak a word. His respirations were not hurried, his temperature and pulse were normal, his face was flushed and red, and it was evident that there was no impediment to the entrance of air into the chest. I ordered a mustard poultice to be applied to the throat, and gave him a dose of spirits of æther in water, and in about ten minutes the paroxysm was over. On the following morning he told me that he awoke out of his sleep with the most violent pain in the throat, and that he could not move his tongue or speak. There was no chest mischief of any kind. The next night he awoke with a precisely similar attack, which was relieved in the same way that it was on the previous night. The third night the same kind of attack occurred at precisely the same time, and not caring for a repetition of this business, I gave him what I ought to have given him in the first instance, namely, a strong emetic, which was followed in three hours by 4 grs. of calomel. I examined his throat on the following morning and could find nothing abnormal. The emetic and the calomel purge cured him. I sought for some reflex irritant, but I could find none.’

A somewhat similar case to this came before me not long after, in a young pale, and hysterical woman of 23 years of age. I gave her at once an emetic, followed by a calomel purge, which cured her. I do not think that these neuralgias of the larynx are common—at all events, they have occurred very rarely in my practice. Yet there is a form of neuralgia of the larynx which must be noted, and which is much more common. I refer to neuralgias of the larynx which are met with in the first and last stages of phthisis. I had a young girl under my care in the North London Hospital for Consumption, about 18 years of age, who suffered from intercostal and clavicular neuralgia almost alternately with neuralgia of

the throat. The neuralgia between the ribs came on early in the evening, and the neuralgia of the throat at a later period. The administration of arsenic and atropine cured her. I suppose the most distressing cases which one has to see and attempt to relieve are those painful affections which occur in the last stage of phthisis. They are associated with frantic attempts to breathe, and frequently, as in many cases which I have seen, intense pain about the throat and extra-inspiratory muscles. The administration of a few drops of chloroform is often useful in such cases as these, but perhaps one of the most efficient remedies is to raise a blister quickly with the strong solution of ammonia, and then to apply a grain of powdered morphia to the denuded surface.

NEURALGIA OF THE MAMMARY GLAND.

(*MASTODYNIA*.)

IN Sir Astley Cooper's valuable work on 'Diseases of the Breast,'* we find the following description of neuralgia of this organ :

'The breast is liable to become irritable without any distinct or perceptible swelling, as well as to form an irritable tumour composed of a structure unlike that of the gland itself, and which therefore appears to be of a specific growth.

'Both states of disease in the greatest number of examples occur in young persons from the age of 16 to 30 years. I have never witnessed it prior to the commencement of puberty.

'When the complaint affects the glandular structure of the breast, there is scarcely any perceptible swelling, but one or more of its lobes becomes extremely tender to the touch, and if it be handled the pain sometimes continues for several hours. The uneasy sensation is not confined to the breast alone, but it extends to the shoulder and axilla, to the inner side of the elbow and to the fingers ; it also affects that side of the body even to the hip—the patients cannot sleep on that side, and the pain is sometimes so severe as to prevent even their resting on the diseased side, and the weight of the breast in bed in some instances occasions intolerable pain.

'Patients state that heat and cold frequently succeed each other

* 'Illustrations of Diseases of the Breast,' by Sir Astley Cooper, Bart., F.R.S., 1829, p. 76.

in the breast, and it would seem that the pain resembles that of *tic doloieux*, darting like electricity through the part and through the neighbouring nerves. When the pain is most severe the stomach sympathizes and vomiting is produced. The suffering is very much increased prior to menstruation, is somewhat relieved during the period, and decreased after its cessation. There is no external mark of inflammation, as the skin is not discoloured.

‘Besides this irritable and painful state of the whole or part of the breast, a tumour sometimes is found distinctly circumscribed, highly sensitive to the touch, acutely painful at intervals, more especially prior to menstruation, very movable, often not larger than a pea, seldom exceeding the size of a marble; generally one only exists, but in other cases there are several similar swellings. This disease is met with in persons of an *irritable and nervous temperament*, in whom there is an excessive excitability of the nervous system accompanied with diminished power.

‘CASE.—Mrs. —, aged 49, has an irritable breast without any tumour. The disease commenced immediately after she had received a great alarm from some accident in a steamboat, which produced a severe illness. The pain she feels in the breast is pricking, as if, as she says, from a pin or fork. If it is examined by the finger or pressed, it extends through the whole breast, and then it aches like the pain of rheumatism. There is no tumour.’*

I have here given an excellent description of the neuralgic or irritable breast in the words of the greatest authority of this century. In my own experience, however, I have found neuralgia of the breast, when not associated with neuralgia of the muscles of the ribs, or with a general neuralgic habit of body, to be secondary to some irritability of the ovaries, or of the womb, or of the sexual apparatus. I have frequently seen a uterine neuralgia

* The nervous supply of the mammary gland is derived chiefly from the dorsal intercostal branches; the skin over this gland is supplied by the lateral and anterior perforating branches of the second, third, fourth, fifth, and sixth intercostals, and by some branches of the supra-clavicular nerves. The substance of the gland is supplied by the lateral perforating branches of the fourth, fifth, and sixth intercostal nerves.

pass to the left ovary and finally attack the left breast, leaving the other organs quite free from pain. *The pain* is usually complained of as burning, tearing, or lancinating, darting or stabbing. It may affect the whole of the gland, or part of the gland only, or it may confine itself to the nipple and its areola. It may be superficial, and affect the skin and integument, or it may affect the deep structure of the gland. The radiation of pain is, for the most part, downwards to the fifth, sixth, seventh and eighth rib, or upwards to the axilla, and even down the arm to the ends of the fingers. If the spinal column be examined, painful spots will be found over the spines of the third, fourth, fifth and sixth dorsal vertebræ. It sometimes, but rarely, affects the male sex. It is invariably associated with a state of debility, and not infrequently of spinal irritation. It may be said to be most common in the hysterical, the chlorotic, and the anæmic female. In some cases it is very persistent, and the greatest care has to be exercised to order to ascertain its immediate cause before the precise remedy can be applied. A typical form of neuralgia of the breast is due to over-lactation, and I have seen several severe neuralgias of the breasts in women who have suffered from menorrhagia, dysmenorrhœa and profuse leucorrhœa, and which were due to these conditions. There are other causes, such as malarial poisoning, living upon a damp clay soil, exhaustive indiscretions, excessive fatigue, worry and over-anxiety.

Treatment.—It will be found necessary, in the majority of cases, to use local as well as general, and constitutional remedies. Of all local remedies, the best is to smear the breast over with the extract of belladonna and glycerine, and then over this to apply a hot solution of the hydrate of chloral (ʒiv. ad. ʒxvj.) upon spongio piline; the hypodermic injection of morphia with atropia will be found useful in some cases, and so also will a liniment of chloroform, aconite and opium. A nutritious diet and cod-liver oil should always be given; stimulants of any kind in this form of neuralgia should for more than one reason be avoided. In some chronic forms of neuralgia of the breast, the $\frac{1}{12}$ gr. of bichloride of

mercury, quinine, strychnine and sulphate of iron, should be given three times a day, as well as a mixture of bromide of potassium, chloride of ammonium and compound tincture of valerian. When this neuralgia occurs in young girls, the best plan of treatment is to administer a drop of croton oil every third morning, and a mixture of iron and quinine three times a day, and to leave the breasts alone. Frictional electricity, as well as the faradic, has occasionally proved useful in some of my cases.

NEURALGIA OF THE HEART.

THE nervous affections of the heart are of so much importance that we regret extremely that in a small work of this kind we are unable to treat them in any other than the most common-place and practical way. Therefore we will confine our observations as far as possible by chiefly stating cases which will illustrate or exhibit those distressing and serious conditions known to us as *neuralgias of the heart*. We need only consider for a moment the *vitally important part* which the regular and peaceful action of the *heart* exercises in our every-day comfort and well being, to be mindful of the grave consequences which must naturally ensue when the action of the heart becomes disturbed, and when the due circulation of the blood is even partially arrested or even slightly interfered with. We know by experience that 'nervous hearts,' 'irritable hearts,' 'neuralgic hearts,' 'gouty hearts,' and 'organically diseased hearts,' are handed down from generation to generation, and that death from 'heart-disease' is very frequently transmitted from father to son with astonishing certainty. When we reflect upon the *intense sympathy* which exists between the heart and the brain through the nervous system, and that every movement of the heart is controlled and governed by vast tracts of nerves which sympathise with every organ in the body, we are then only in a position to form ever so small an estimate of the wonderful manner in which the heart adapts and accommodates itself to the ever-varying impressions which are constantly forcing themselves upon its notice, and of which it is compelled to take cognisance. Naturally enough, when the heart has troubles heaped upon it which it is unable to bear, it becomes

exhausted, fatigued and irritable, and if it does not stop altogether, it makes its presence felt by palpitation, by intermittency and disturbed action, by oppression and anxiety, and spasm in breathing; and also it makes known its state of exhaustion by its neuralgic utterances in its throes of agony, anguish and despair.

Although neuralgias are not of vital importance when they occur in other parts of the body, yet when the heart becomes the seat of a neuralgia it is a manifestation which must at all times be regarded with fear and anxiety. That a large number of persons die annually in this country from 'exhaustion of the heart' is a well known fact, yet it is frequently the case that the muscles of the heart and the automatic ganglia have undergone fatty change, and that they are unable to appreciate the stimulus sent to them by the sympathetic system of nerves. Amongst the older writers who made the diseases of the heart their study, we find that they did not appreciate to its full extent the immediate power which the nervous system possesses in producing so many of the serious symptoms which we now know are due almost entirely to nervous agency.*

CASE XLV.—NEURALGIA OF THE HEART.

'I remember many years ago, and when I was connected with Charing Cross Hospital, a young man of 27 years of age

* There are three systems of nerves concerned in the innervation of the heart.

1. The automatic (ganglionic) system, which is not influenced by impressions conveyed to it from the brain or spinal cord, but whose action is accelerated or depressed by morbid poisons circulating in the blood; 2. The vagus, or pneumogastric system, which moderates the action of the heart; and 3. The sympathetic system of nerves, which conveys to the heart the stimulus to increased action. Between the two latter systems there exists a wonderful amount of reciprocal feeling, and the one acts as a check upon any recalcitrant energies which may be exerted by the other. This may easily be made evident. Take, for example, two patients, the action of whose hearts is similar, say 70 beats per minute. Give to one $\frac{1}{10}$ gr. of atropia, and the power of the vagus will be less inhibitory—the check-string of the heart will be loosened, the muscles will run wild, and the pulse will rise to 120 or even 140 per minute. Give to the other patient 15 mins. digitalis, and the vagus will be stimulated to fresh exertions, but the pulse will fall to sixty per minute. Now, these nerves which control the action of the heart are influenced in a precisely similar way through varying mental processes and impressions, which may be caused by pleasure or joy, by grief, anxiety, and sleepless nights and days of fatigue, by distress, intense watching, and by sudden news, either of pleasure or of pain.

walked into the out-patient room in the middle of the day; his features were expressive of the deepest agony, the colour of his face was natural, but his pulse was flickering, and its action so hurried that its beats could not be counted. He stated that he was seized, whilst walking along the street, with first a kind of stitch over the heart, and a feeling as though the heart had stopped, when the most agonising pain shot like lightning through the heart, and next that the whole of his chest seemed fixed, and as though it was on fire; and then he became covered with a cold sweat, and thought he must fall down, had not some of the bystanders upheld him and brought him into the hospital. By means of hot bottles to the feet, and mustard over the stomach, and camphor and ammonia, he became better. He said that he was occasionally subject to these seizures, although he never as a rule eat anything to disagree with him. After the paroxysm had gone, I listened very carefully to the heart, but could find no murmur. The heart was of normal size, and the arteries were devoid of undue tension. I heard from his friends, some time afterwards, that this man died suddenly in what was called a fit.'

The following case points in the same direction :

CASE XLVI.—NEURALGIA OF THE HEART.

'M. A. was admitted into the Central London Sick Asylum under my care on February 10th, 1876; has a brother in a lunatic asylum; says that she began to menstruate at the age of 17—was bled to bring it on, and it did so! She has menstruated regularly ever since. Her health, with the exception of feeling nervous, was excellent until about eight years ago, when she passed a tape-worm, which frightened her greatly, and she became very hysterical. In a fortnight after this she lost the use of the lower limbs, which continued for twelve months, when the paralysis so greatly lessened that she could walk about. At this time she became highly nervous, and suffered from fits of extreme excitement, and with violent palpitation of the heart, and with the most acute pain in the heart. The pain was often burning and stabbing, but occasionally she would experience a pain running through the heart, as though a knife had pierced it, and then the heart would give a bound and cease to beat for a few seconds. On her admission it was noted that she was extremely nervous, and that she became excited and shed tears when spoken to. *Circulation :*

No lividity of features, pulse too regular, no tension or arterial twisting, no jugular pulsation or carotid regurgitation, no prominence of superficial thoracic veins. *Heart*: Action regular but sharp, as if fibrotic, apex beat to sixth rib. *Auscultation*: The sounds of the valves at the base of the heart are free from murmur. The sounds at the apex of the heart are not obscured by murmur; there is, however, a transient murmur to be heard at the apex of the heart of varying character; sometimes it is grinding, sometimes soft and blowing, and at other times is harsh. For days together it would be entirely absent, and could not be detected upon the most careful auscultation. In point of time it is sometimes presystolic, diastolic, or even systolic. I came to the conclusion that the murmurs were not due to organic disease of the valves of the heart, but that they were due to spasm of the heart, which gave rise to what is sometimes denominated, and incorrectly so, blood murmurs. These attacks of neuralgia of the heart usually came on at night; they were always attended by great mental excitement and feeling of constriction across the chest. No drug relieved her, like the hypodermic injection of 1 gr. of morphia. Her great dread was that she would die of disease of the heart, and she used frequently to remark that as night came on she thought the severe attacks from which she suffered were in a measure due to the extremely nervous condition which this apprehensive state induced. I always looked upon this as a true neuralgia of the heart; the attacks became much less frequent by the administration of arsenic, bromide of potassium, and tincture of valerian, and the murmurs became quite inaudible. Yet, as the heart attacks passed off, a somewhat nervous affection commenced in the stomach and bowels. The pain in these parts came on quite suddenly, in the most violent way, and it would require two or three injections of morphia to relieve her. However, this clearly proved the purely nervous character of the pain.

In the disease known as *Angina Pectoris*, or *Breast Pang*, we have one of the most common and familiar instances of neuralgia of the heart. Walsh states that 'Angina pectoris seems to be constituted by spasm of the heart and neuralgic pain.*' Most authorities seem to agree in this: That there must be some organic changes about the heart in this disease, and, in fact, this

* 'Diseases of Lungs and Heart,' p. 434.

is usually found, upon examination, to be the case. I am certainly inclined to think that the 'neuralgic heart' is essentially a 'gouty heart.' Yet we can have a 'nervous' and 'neuralgic heart' at any period of life, but it is only in the middle and advanced stages of life when we find the gouty heart to give evidence of neuralgia. In the earlier periods of life it is not common to find the 'gouty heart,' yet at these periods we often find that rheumatism produces neuralgia of the heart. So that we may *broadly* state, and with a near approach to truth and accuracy, that 'neuralgia of the heart, before 30 years of age, is either purely nervous or rheumatic,' and that 'neuralgia of the heart, after 40 years of age, is either purely nervous or gouty.' The following case is interesting as one of uncomplicated 'neuralgia of the heart.'

CASE XLVII.—NEURALGIA OF THE HEART.

'S. C., a young, stout, strongly built woman, 26 years of age, was admitted into the Central London Sick Asylum under my care. She had a very marked nervous history, and all her relatives on the mother's side were exceedingly nervous. She always felt very nervous, until her heart began to beat violently about nine months ago; but since then she has not been so nervous as she was before. All *her functions* were natural, and she knew of no cause whatever to bring about her heart trouble; there was a little difficulty of breathing when she exerted herself, but no organic disease of the heart could be detected; the pulse was rarely if ever under 130 per minute, and often during her attacks I have counted it going at the rate of 170 per minute. The attacks usually commenced with a feeling of burning in the chest, fulness in the throat, a sense of tightness across the chest, and darting pains, which succeeded each other with great rapidity, beginning in the heart and darting down the inner side of the arm. The face and ears became intensely red during the seizure, which lasted for five or ten minutes; and as the attack passed off, the face became pale, she perspired very profusely, and complained of the left arm feeling numb and powerless. Now, digitalis and steel had very little effect in bringing down the pulse in this case, and this is not any exception to the general rule in purely nervous palpitations of the heart. What did her most good was valerian, arsenic and bromide of potass. She left the hospital quite cured.'

This patient had not the signs of Grave's disease. We rarely, if ever, find neuralgia of the heart in persons under 20 years of age, unless it be from over-exertion. I have seen a few cases in lads, in whom it was produced by too violent exercise.

CASE XLVIII—NEURALGIA OF THE HEART, FROM
OVER-EXERTION.

'I was called to see a young gentleman, about 19 years of age, who had been completely exhausted from over-exertion in a sculling race; he said that he felt completely done up after the race was over. When he got home he felt faint and sick, he could scarcely get his breath, and complained of violent stabbing pains over the region of the heart and extending to the left shoulder. When I saw him, the countenance was anxious, the breathing oppressed, and the pain, he said, was excruciating; the pulse was 140 per minute, weak and fluttering, and the extremities were cold. I ordered hot water to the feet, mustard poultices over the stomach, and a glass of hot brandy and water, and I injected $\frac{1}{2}$ gr. of morphia into the arm. Before I left the house, about half an hour afterwards, he was sleeping tranquilly, and his pulse had fallen to 100, and I felt sure, and such was proved to have been the case, that he had really tided over a very critical moment in his life. His friends, and he himself, in fact, told me that he was wholly unprepared before the race for any great exertion. I listened to the heart on the following day, but I could find no organic disease whatever. *The attack was really due to nervous exhaustion.*

Rheumatic Neuralgia of the Heart.—This differs from gouty neuralgia of the heart, first, in respect to age; and secondly, from the fact that, in the majority of cases, the former is usually associated with some amount of pain in the joints, which is slight and of a fleeting character. This nervous condition of the heart is frequently the forerunner of commencing organic disease. *The rheumatic individual will complain for a few days of flying pains about the joints, and there may be no fever or thirst, but only a general feeling of malaise, and an irritable condition of the heart, which will commence to palpitate without any apparent cause. He is then seized quite suddenly with agonising pain over the heart, the breathing is momentarily arrested, and the pains from the heart will*

dart across the chest, or to the left shoulder and down the arm ; he becomes faint, the pulse will be scarcely perceptible at the wrist, and in a few minutes the attack passes off. There may be a repetition of such attacks, or there may not. It matters little, however, for, in either case, I have been led to regard such persons as the victims of heart-disease either sooner or later. When the attack has passed off, and there are no further heart symptoms of any kind, and the stethoscope reveals nothing the matter with the heart, 3 grs. of quinine three times a day will relieve the patient of the neuralgia. The next time he is seen by the physician valvular disease may be detected. I have so often, during the time of my asylum practice, predicated forthcoming heart-disease from this cause, that the nurses would say to me, when such a patient was re-admitted under my care : ' I suppose he has heart-disease now ? ' And so it has invariably proved. By way of example merely, I will quote the following case :

CASE XLIX.—RHEUMATIC NEURALGIA OF THE HEART.

' C. E., age 23, a fresh-looking, fair-haired, and well-developed servant girl, was admitted under my care in the Central London Sick Asylum in March, 1875. She complained of flying pains about the joints, which were not swollen or red, but were tender to the touch ; there was no fever or thirst, but she had headache and a furred tongue ; the heart's action was normal, pulse regular, and the stethoscope gave no indication of valvular disease. She seemed depressed, and did not care to take her food. In the afternoon I was called suddenly to see her, and found her in an excited, half-delirious state, and she kept crying out : " Oh, the pain of my heart ! " The pulse was hurried, weak, and small ; her breathing was also hurried and panting, and the feet were cold, and so was the body. A draught of æther and ammonia was administered, hot water and mustard poultices were brought into requisition, and in about a quarter of an hour she was comparatively free from pain. She stated then that she felt as though her heart were being screwed out of her body. Strange to say, after this seizure her pains left her, and she took her discharge from the hospital.'

At this time no organic disease whatever could be detected, and yet I predicated her dissolution from heart-disease. I saw

nothing of this patient until a few months ago, when her appearance told the tale of aortic disease with regurgitation.

Gouty Neuralgia of the Heart.—Suppressed gout is a common cause of *neuralgia of the heart* and of angina pectoris and breast pang; and although I know that it is a doctrine which is not universally accepted, yet, in my opinion, it is the most common cause of this disease. Handfield Jones* says that a relative of his who was gouty had frequent attacks of neuralgia of the heart, and died in one, and that one of his daughters suffered in the same way. 'Yet,' says the same author, 'rheumatism appears to me to have much more relation to angina pectoris than gout has.' *Whether it be due to gout or not is a question which we do not care to discuss here, but all who have witnessed the dreadful sufferings of patients with this disease are agreed that it is essentially of a neuralgic character. Gouty neuralgia of the heart is unquestionably an hereditary affection, and it may be brought on, as it usually is, by undue exposure to cold, to season and to climate. The time of year and the direction of the wind are not unfrequently exciting causes. The sudden appearance of an east or north-east wind will bring on an attack of neuralgia of the heart in that individual who is pre-disposed by heredity to gout and heart-disease, just in the same way that it produces megrim, sick-headache, bronchitis, diarrhæa or inflammation of the lungs in others. There are some authors who say that excessive smoking of tobacco is a cause of this disease. I have not met with such yet. I should say it was extremely probable, seeing what an influence the smoking of this weed has upon the sympathetic system of nerves. From my own practice and observation I am quite sure that neuralgic affections of the heart are essentially due to sympathetic depression, which is merely another term for nervous exhaustion, and it matters not whether the nervous centres are depressed by nicotine, by the poison of gout, or of rheumatism, or of diphtheria, or by the normal waste products of the body which are not eliminated; or by causes originating in the outward world—such as over-mental work, undue bodily fatigue, or*

* Handfield Jones, 'Functional Nervous Disorders,' 1870, p. 583.

shock and the never-ending worries and anxieties attendant upon the wear and tear to gain an existence. Such causes as those just enumerated have only to be given suitable subjects on which to act (and such subjects are persons who are predisposed to nervous affections of the heart, or to neuralgia of the heart), and neuralgias or neuralgic affections of the heart, like seed sown on suitable soil, will spring into existence with astonishing rapidity. Now, these gouty neuralgias of the heart are much more common in men than they are in women. Out of 327 cases which I have noted, 298 were males and 29 only were females. When women suffer from this neuralgia of the heart, it is usually at the climacteric period of their lives. These paroxysms of neuralgic pain of the heart are usually of short duration; sometimes they only last a few minutes, and the patient settles down upon the pillow to sleep, when another paroxysm sets in, and so these paroxysms may go on for half-an-hour, or even several hours, unless prompt measures are taken to relieve them or keep them off altogether.

The pain, as a rule, commences suddenly, and confines itself, for the most part, to the left side of the chest and to the left arm, or it may extend to the right side of the chest and to both arms. In the beginning of the attack, as Lander Brunton has pointed out, the heart may appear to be acting vigorously, yet its real force is but slight,* and the radial arteries show only a slight degree of elevation and tension. Now, it appears to me, from what I have read and seen of this *gouty neuralgic affection of the heart*, that different observers hold entirely opposite views in reference to the nature of these attacks, and their signs and symptoms: some speak of the pulse being small, quick and hurried, and others of its being slow, laboured and depressed; but I should conclude that this variation depends almost entirely upon the period of the attack when these observations are made. If so, this would account for the varying opinions of most observers. As far as I have been able to judge, the pulse is more frequent at the commencement and end of the paroxysm than it is at the height of the paroxysm. It is quite true that elevation of tension

* *Lancet*, July 27, 1867, p. 97.

may be intensified towards the end of the attack, but this is most certainly not always the case. The increased activity of the respirations during these seizures may be due to an increased activity from reflex irritation in the respiratory centre of the medulla. Yet we must not forget that the hurried and panting respirations are in a measure undoubtedly due to the great fear and anxiety and the 'sense of impending death,' which feelings invariably accompany these neuralgic seizures of the heart.

Treatment.—In all affections or diseases which are directly or indirectly connected with the vessels of the heart, and with the circulation of the blood, we have first to make ourselves sure as to whether or no there is any organic change going on in the heart itself, or in the vessels in immediate connection with it. We should test the force of the heart by the strength of the circulation, and this can only be done by means of comparative and careful cardiac and sphygmographic tracings. The function of respiration should then be carefully compared with that of the circulation, and the quickness or slowness of the pulse must be analyzed in reference to the respirations, both under conditions of quietude as well as of bodily and mental exertion, and above all, perhaps, from a practical point of view, we must not lose sight of the intimate relationship which exists between the functions of digestion and those of circulation and respiration. In my experience, I have found it quite useless to attempt to treat any disease of a chronic kind, let it be due to the nervous system or not, without paying an infinite amount of attention to the details of eating, drinking and sleeping, and to the excretions generally. However, for the more immediate treatment of the distressing symptoms, we must have recourse to mustard poultices, which should always be applied to the spine as well as the chest. My plan is to apply mustard poultices or turpentine stupes to the chest, and sponges wrung out of boiling water to the dorsal spine. If the paroxysms cannot be checked by these means, I use sponges filled with very hot and very cold water alternately to the back of the neck and the middle of the spine. I am quite sure that I have relieved

and cut short many of these attacks by this simple means. In the *nitrite of amyl* we have a remedy, but not a specific, for this disease. I have obtained some very brilliant results by its use; but, in many cases, it has been of no avail whatever. I certainly place more faith in the subcutaneous injection of $\frac{1}{2}$ gr. of morphia, in addition to the external remedies which I have just spoken of, than I do in anything else. The inhalation of *æther* and of *chloroform* is sometimes very useful to cut short the paroxysm, but all these remedies may be used after the morphia has been injected. I have relieved these attacks, when they have become very chronic, by injections into the rectum of 3 drs. of turpentine in a pint of gruel, and I should strongly advise this mode of treatment when the paroxysm is of purely nervous origin.

The modes of treatment most frequently adopted by the modern school of physicians I have not found to be of any great practical value in these cases. I refer to the use of the bromides and valerianates; but the iodide of potassium, in full doses at bed-time (one scruple), and persistently used for two or three months, has, in my experience, often effected a cure; at the same time, a mixture of arsenic, atropine and bichloride of mercury should be given two or three times a day. All kinds of pastry and sugar, and the less digestible vegetables, should be carefully avoided, as well as all wines and other fermented liquors which are bottled; but the best draught pale ale, which has been thoroughly fermented, and whisky and Apollinaris water, are the most wholesome drinks. The bowels should be carefully regulated, with a pill composed of podophyllin, blue pill, extract of colchicum and capsicine. Plasters of belladonna and the emp. calefaciens, with camphor applied over the pit of the stomach, are sometimes useful in keeping off these attacks. I have cured many cases by the use of the above measures, and the use of the induced galvanic current. The anode should be placed upon the eighth dorsal spine, and the cathode over the pit of the stomach, and the current must be maintained for at least half an hour. It should be very slight at first, but at last the current must be increased until the skin is quite tender. Faradization to the spine

alone, and to the cervical sympathetic nerve at the root of the neck, is sometimes of great service.

When these gouty neuralgias are associated with marked arterial tension, and a normal pulse of from 75 to 80, which is sometimes the case, then no remedy that I know of cuts short the attack so readily as atropine. I usually give one full dose of $\frac{1}{4}$ gr., and in a few seconds the arterial tension is subdued, the pulse runs rapidly up to 130 or 140 per minute, and the pain subsides at once.

CASE L.—NEURALGIA OF THE HEART, CURED BY IODIDE OF POTASSIUM AND ATROPIA.

'A gentleman, aged 53, consulted me for these distressing attacks of neuralgic pain at the heart ; he had suffered from them for years, and they would come on at any time of the day, so that he was never safe from them. He was somewhat prematurely-old-looking, but otherwise there was no sign, upon auscultation, of heart-disease, or of valvular disease of the heart. When I was called to see him, I found him sitting up in bed, apparently afraid to move one way or the other, and he did not even venture to speak above a whisper. This was between the paroxysms. I had a draught at hand containing the $\frac{1}{4}$ gr. of atropine. In a short time the paroxysm came on, and his face was expressive of great torture, the chest seemed fixed, and the respirations shallow. I kept my finger upon the pulse, which was beating 80 to the minute, and gave him the atropine draught, and in less than forty seconds the pulse rose to 140, the tightness across the chest vanished, and he seemed transfixed with astonishment ; the paroxysm had never disappeared in such a rapid way before. I cured him with iodide of potassium taken at night, and a mixture of atropine and bichloride of mercury during the day.'

The following case is of equal interest to the former in reference to treatment :

CASE LL.—NEURALGIA OF THE HEART, CURED BY ATROPIA.

'E. F., aged 46, came into the Central London Sick Asylum under my care ; her father had died suddenly at the age of 40, and her mother had suffered greatly from gout, and died at the

age of 70. Her illness commenced immediately after the cessation of the menses, some three years before I saw her. The attacks of pain were agonising, and nothing seemed to be of any use in arresting them before I tried the atropine. During the attack the pain shoots over the left half of the chest and down the left arm. The chest wall seems rigidly fixed, and she is unable to speak. It was really remarkable to watch the effect of atropine upon her; after taking the $\frac{1}{16}$ gr. the relief was almost instantaneous, so that she seemed quite surprised by the sudden relief which it afforded her. She was cured by this treatment, and left the hospital quite well.'

Epileptiform Neuralgia of the Heart.—This is a condition of angina by no means uncommon amongst those persons who suffer from severe attacks of hysteria or epileptic fits; sometimes a paroxysm of neuralgia of the heart will immediately precede an epileptic fit, or even take its place. I have a patient now under my care at the Hospital for Epilepsy, who has suffered acutely from these attacks between her epileptic seizures. They are essentially neuralgic, and commence by slight pain under the left breast, which gradually ascends the chest, until it reaches the throat, and she feels as though she is going to be choked; then the pain increases in violence, and attacks the shoulder and left arm; sometimes it leaves her quite suddenly altogether, and at another time it leaves the chest and fixes itself in the left arm, where it will remain for hours. I have seen many cases somewhat similar to this, and they differ from the purely hysterical in which there is difficulty of breathing, with fixed chest, but which disappear with a prolonged sigh or fit of sobbing.

NEURALGIAS OF THE ABDOMEN.

THESE include neuralgia of the liver, neuralgia of the kidneys, neuralgia of the ovaries, neuralgia of the uterus, neuralgia of the intestines.

Neuralgia of the Liver.—Most authorities, Murchison,* Trousseau,† Frerichs,‡ Anstie,§ Andral,|| etc., are agreed that true neuralgias of the liver do occur. Murchison says, *loc. cit.* : 'His experience would certainly lead him to doubt the purely neuralgic character of any such attack in which the pain was followed by jaundice.' Although, for my own part, I am led to believe that true neuralgia of the liver is by no means a common affection, independent of gall-stones, or some impediment to the flow of bile into the intestines, yet in the course of my practice I remember many cases, of severe pain over the region of the liver and right hypochondrium, and radiating over the right shoulder, unassociated with jaundice, which perhaps may fairly be termed neuralgic for the following reasons:—1. That the pain has occurred in patients who have been subjects of neuralgia; 2. That the pain has come on suddenly and disappeared in like manner, or moved to some other part of the body; 3. That the patients have been of a highly nervous temperament; 4. That the pain has appeared suddenly after some shock to the nervous

* Murchison, 'Lectures on Functional Derangements of the Liver.'

† Trousseau, 'Clinical Lectures,' New Sydenham Society's Transactions, vol. iv. p. 236.

‡ Frerichs, 'Clinical Treatise on the Disease of the Liver,' New Sydenham Society's Transactions, vol. ii. p. 348.

§ Anstie, 'On Neuralgia,' 1872, p. 61.

|| Andral, 'Clinique Medicale,' tome 11.

system ; 5. That there has been an absence of jaundice, of indigestion, and of irritable bowels, and perhaps of high-coloured urine or clay-coloured stools ; 6. That there is often great tenderness upon pressure over the eighth, ninth and tenth dorsal vertebræ. Therefore in making our diagnosis we must be careful to draw the line of demarcation between a passive congestion and a sub-acute inflammation with enlargement of the liver and catarrh of the stomach. It is not at all improbable that many of the cases, which have been set down as neuralgia of the liver, have, in fact, been due to this condition, or to gall-stones, or to spasms of the gall-ducts. The nearest approach to a typical neuralgia of the liver, which I have ever seen, was that of a lady about 39 years of age.

CASE LII.—NEURALGIA OF THE LIVER.

‘This lady was extremely nervous, and in her younger days had been subject to epileptic seizures, and I had my suspicion that she suffered from night attacks of epilepsy during her sleep. She was pale, fragile, and at times very depressed. She also suffered from neuralgic seizures in different parts of the body. One evening she was seized quite suddenly with severe pain over the region of the liver and in the right hypochondrium, and it seemed to affect nearly the whole of the right side of the chest. The respirations were hurried, but the temperature was of the normal standard. She had eaten nothing that she thought could have disagreed with her. There was pain, on pressure, over the gall-bladder, which extended around the liver to the eighth, ninth and tenth dorsal vertebræ, which were also tender. The attack, which was severe and alarmed her very much, yielded almost at once to $\frac{1}{4}$ gr. of morphia, injected hypodermically ; but it returned for several days at just about the same time. I treated her with full doses of quinine, and she soon became well. There was some slight yellow colouring of the conjunctiva, but beyond this there were no symptoms or signs of jaundice. The great point of interest, and which confirmed my diagnosis in this case, was the slow, full, steady pulse of not more than 50 beats per minute, whereas, generally speaking, her pulse was quick, weak and nervous.

Neuralgia of the Stomach, sometimes called Nervous Dyspepsia.—A pure *neuralgia of the stomach* is much more

common than is usually supposed, though, it is true, the digestive powers of the stomach have relatively very little to do with its production or its termination. It is more or less associated with sympathetic irritation of the liver, the gall-bladder and the gall-ducts, and implicates by nervous agency the first portion of the intestine (duodenum). The pains of this disease very often simulate the passage of gall-stones along the common duct which leads from the gall-bladder to the intestines; but there are marked signs by which the two conditions can be distinguished. The cases of *neuralgia of the stomach* which I am about to consider differ entirely from those cases of *indigestion* which are associated with catarrh of the mucous membrane of the stomach. I do not mean to say that neuralgia of the stomach is not associated with flatulence, for it is very frequently, but by no means necessarily, so associated. If the attacks of *neuralgia of the stomach* are very severe, temporary attacks of jaundice very frequently follow them. Now, in what class of persons do we generally find this form of neuralgia? It is not usually found in the bilious or the phlegmatic, but it is generally found in thin, pale, and bloodless persons; and is more common in the young than in the aged. If a person of middle or advanced life suffers from severe dyspepsia, without symptoms of jaundice, then some organic change may be expected; but these organic changes are not usually found in individuals before 50 or 55 years of age. The attack of neuralgia of the stomach begins with a feeling of sinking at the pit of the stomach, then it increases to one of a gnawing character, then to a feeling of burning, which diffuses itself all over the stomach and affects the back in like manner; and after this, shooting pains extend from one end of the stomach to the other, and then leave the patient quite suddenly. Sometimes the patient will complain of a dead weight like a stone or like lead in the stomach, but all the symptoms usually pass off suddenly and completely. The next attack may be in an hour's time, or it may not be for two or three days, or it may perhaps not return at all; or, again, between the attacks of neuralgia of the stomach, the patient will suffer from neuralgia of the face, or of the neck, or of the arm. I have had

patients come to consult me who had been subjected by physicians to the most rigid laws of dietary, that they had been afraid to take scarcely anything, and thus, consequently, their pains increased, and also their general weakness. *The most persistent form of neuralgia of the stomach that I ever saw I cured at last by feeding the patient every half hour, and giving him stimulants and opium together every three hours.*

If neuralgias generally are 'the prayers of the nerves for healthy blood,' then I am indeed quite sure that neuralgia of the stomach is 'the stomach's prayer for frequent feeding.' In neuralgias of the stomach digestion is accelerated rather than retarded. I am certainly of opinion that in the pure form of neuralgia of the stomach, which I am now considering, it is the pneumogastric nerve, and not the sympathetic nerve, which is most at fault. Yet the same exciting causes will bring on a neuralgia of either nerve, or, it may be, of the two combined. *In neuralgia of the stomach, where the pneumogastric nerve is alone involved*, the pain will come on rapidly and disappear suddenly, leaving no ill effects behind. On the other hand, if the sympathetic nerves are affected with the pneumogastric, then in this form of neuralgia we have the pain more persistent and more diffuse, and extending over the chest and between the shoulders; there will also be acute pain in the region of the heart, and the heart will suffer from palpitations, and the pulse may be intermittent, and even attacks of vomiting may ensue, either at the time of the pain or immediately it has subsided.

In this latter form of neuralgia of the stomach (where most probably the solar plexus is involved) we have intense sympathetic depression, and if steps be not taken to remove the exciting cause the sufferer may go out of his mind and become in time a confirmed melancholic.

CASE LIII.—NEURALGIA OF THE STOMACH, INDUCING HYPOCHONDRIASIS AND MELANCHOLIA.

'A gentleman whom I had known for a long time (and who had a wife who was a great invalid, and whose sufferings gave him the

most intense anxiety and grief) was afflicted for many years with this form of neuralgia, to which I have just been referring. He eventually left the country, and came to reside with his wife in London. He was for months under the care of the leading physician of the day. In addition to his other troubles his eyesight became affected, and he suffered from intense neuralgia of the eye-balls, though the retinae were frequently examined and said to be healthy. At this time his wife died, and all his previous symptoms became exaggerated: his nights were restless, he became depressed, and wished that he was dead. His friends then placed him under my care. He was thin and emaciated, and was a complete wreck of his former self: the eye-balls were large and protruding and full of neuralgic pains (commencing glaucoma), the tongue was not only furred, but thickly coated, the pulse was variable and weak, and the bowels were acting very irregularly; he was depressed and anxious, he cared for nothing, neither could he fix his attention upon anything, and he wished to be alone, and he wished to be dead. He was constantly complaining of violent pains of the stomach, which extended over the chest, and which invariably passed off with an attack of diarrhoea. He persistently refused to take the nourishment which I ordered, and which was the only hope for him, and he fell a victim to sympathetic nervous depression.'

Thus we have two or three kinds of neuralgia of the stomach: the one being an affection of the pneumogastric nerve, and the other an affection of the sympathetic nerve and the solar plexus, and the third an affection of the pneumogastric nerve and the solar plexus combined. The cause of these neuralgias is often the same in all the cases, namely, continued anxiety, over-work, shock, fear, excessive grief or disappointment; and this means, strictly speaking, nervous exhaustion. We not unfrequently find pneumogastric neuralgias amongst young people who are working hard for an examination, especially if they are of a nervous and anxious temperament. I knew two students who, in consequence of working for a certain number of hours prior to an examination, and exercising considerable effort to keep themselves awake, suffered very severely from this neuralgia; and to get relief they had to discontinue work, and to take 20 drops of tincture of opium in a glass of brandy and water. I have remarked that

neuralgia of the stomach must be distinguished from the neuralgia produced by the passage of gall-stones ; and it must be remembered that jaundice may be present in either case. Where gall stones are present there is usually tenderness over the gall-bladder itself, and the attacks of jaundice are more complete and much more persistent, whilst in purely neuralgic cases there is little or no pain either before or after the paroxysm, although the stomach may be tender upon pressure during the paroxysm. Jaundice, though it may occur, is by no means a constant accompaniment, and when it does take place, it rarely lasts more than twenty-four hours. In a patient of mine who suffered from neuralgia of the stomach, the urine, which was passed immediately after the seizure, was loaded with bile, but the subsequent urinary secretions were almost normal in every way. There can be little doubt of this, that neuralgias of the stomach are most frequently found in those nervous constitutions in which there is a marked family tendency to asthma or epilepsy, and that many an epileptic fit becomes abortive and, in fact, is replaced by a stomach or intestinal neuralgia. It is astonishing how sensitive the stomach becomes to mental impressions, after several attacks of neuralgia of its nerves. Several of my patients have remarked that the least thing which worries or vexes them always flies to the stomach, and produces a sinking feeling at the pit of the stomach, just as in some persons it produces hurried breathing or violent palpitation of the heart, thus showing how essentially it is of a purely nervous character.

Treatment.—There are four drugs of decided value in the treatment of neuralgia of the stomach, and these are opium, atropine, arsenic, and strychnine. *Opium* should be given during the paroxysm in one full dose. I generally give the following draught : $\mathcal{R}$ Liq. opii sedat., $\mathfrak{zss}$., sp. ætheris, sulph. cœ., $\mathfrak{m}$ × aquæ camph., $\mathfrak{zj}$, M. ft. haustus. Turpentine stupes should also be applied over the stomach. After the paroxysm of pain has subsided, the following tonic plan of treatment will be found useful : $\mathcal{R}$ Liq. arsenicalis, $\mathfrak{mij}$., liq. atropiæ, $\mathfrak{mij}$., liq. strychniæ $\mathfrak{m}$ v., aquæ. M. pip., $\mathfrak{zj}$. M. ft. haustus, to be taken three times a day after meals.

To the late Dr. Leared (my lamented teacher and sincere friend) the credit is due of having first pointed out the value of arsenic and strychnine in nervous affections of the stomach. He cites the following case, which shows the good effects to be derived from the use of arsenic :

CASE LIV.—NEURALGIA OF THE STOMACH, CURED BY ARSENIC.

‘A gentleman, aged 54, strongly built, but thin and worn-looking, of temperate habits, had endured great trouble and anxiety. About two years before Dr. Leared saw him, he was for the first time seized with a most cramp-like pain in the stomach, which often recurred subsequently. At first, the intervals between the attacks were a month, but latterly he had not been free for a single day. The attacks generally came on at night after going to bed, and it is worth noting that he dined early. The pain lasted from two to four hours, and was described as almost insupportable. The appetite was good, and the bowels acted well. Liq. arsenicalis, given in doses at first of two drops three times a day after food, and gradually raised to eight drops, completely cured him in five or six weeks.’

I can corroborate the above statement regarding the efficacy of arsenic in many cases of nervous dyspepsia ; yet I am inclined to think that some of these cases are due to an atonic condition, or (*sense of*) fatigue of the muscular coats of the stomach, and are in all probability the result of an anæmic or inactive state of the nervous centres ; and it is, I presume, under such conditions that I have found strychnine and atropine of signal service, and of the greatest benefit to my patients who were suffering from this form of gastric neuralgia. In some chronic cases a plaster of belladonna, aconitine, veratrine, and camphor will be found useful, if applied over the stomach.

NEURALGIA OF THE KIDNEY.

THIS form of neuralgia is certainly not common. Sir Henry Thompson * says that it is most frequent in women. Very severe pains are complained of by individuals of nervous and hysterical temperaments, which it does not require any very acute observation to separate from nephritis. The condition of the urine, mostly pale and abundant, the absence of constitutional symptoms, and the existence of mental excitement, will be sufficient to mark these cases.

I have seen in women at the menstrual period very acute neuralgia of the kidney, which has been unattended by any signs of inflammation. Dr. Becquet † thinks that during the catamenial fluxion the kidneys, when movable, participate in the congestion of the genital organs, and become tumified; and in some of my own cases I have arrived at the same belief, whether the kidneys have been movable or fixed. I have observed a neuralgia of the ovary migrate to the kidney of the same side, and *vice versa*. There can be no doubt, however, that neuralgias of the kidney are produced in a large number of instances, both in men and women, from the formation of calculi in the pelvises of the kidney—I mean when these calculi are in their primitive condition, and before they have grown to such a size as to produce actual dilatation of the kidney structure. I have proved this in more than one case by post mortem investigation—renal calculi are relatively as common in women as calculi of the bladder are

* 'Diseases of the Urinary Organs,' Holmes 'System of Surgery,' vol. iv. p. 873.

† Becquet, 'Essai sur la Pathologie des Reins Flottants,' 'Archives Générales de Médecine,' tome I., 1865.

in men. The former, however, like calculi of the gall-bladder, may exist for years, and they may possibly never give rise to any active symptoms, which is however quite unlike the presence of stone in the bladder.

The symptoms and signs of neuralgia of the kidney will be found to be more or less severe, according to circumstances, and they will usually be associated with 'painful spots' about the tenth, eleventh and twelfth dorsal spines of the vertebræ. There is another point of interest in relation to neuralgia of the kidney, and it is this: that it frequently affects both kidneys at the same time, and a feeling of tightness, extending from the loins to the umbilicus, will sometimes be experienced, and firm pressure upon the umbilicus will sometimes relieve the neuralgic pain. The function of the kidney may sometimes be impeded. The urine will be scanty, loaded with lithates, and contain an excess of urea and uric acid; it may even contain blood. A country gentleman, a patient of mine, suffers from attacks of gouty neuralgia, with hemorrhage from the kidney; he has suffered in this way for years, but apart from these attacks he enjoys the most robust health. On the other hand, the urine may be passed in more than normal quantity, and may be either of a high or of a low specific gravity, and devoid of the natural amount of nitrogenous and solid products. A lady, recently under my care, was suffering from various nervous symptoms, and amongst other forms of neuralgia she suffered from neuralgia of the kidney; and at *these times* she not only passed an excessive quantity of urine, but the specific gravity rose from 1018 to 1028, and there was not a trace of sugar. When pressure is made upon a neuralgic kidney, the pain is rather relieved than increased, although vomiting may be induced on account of the pressure. I certainly look upon neuralgia of the kidney as being due to functional irritability, and I presume that the kidney may be in a state of congestion or anæmia, or it is quite possible that one part of the same kidney may be congested and the other part may be anæmic.

M. Charcot has given some very interesting cases of total suppression of urine (ischuria) in highly nervous and hysterical

women, and I am much inclined to believe that kidney neuralgias are in women not unfrequently of the same character, and due possibly to a somewhat similar cause. It is not always an easy matter to diagnose between a neuralgia of the kidney due to a calculus and a functional neuralgia of the kidney. Yet in the majority of cases, when a calculus is the cause, the microscope will give evidence of degenerated and exfoliated epithelium in the urine, but vomiting and even bloody urine may exist when no calculi or kidney disease is present. We shall generally have very little difficulty in diagnosing between a perinephritic inflammation, which may terminate in an abscess, and a simple neuralgia of the kidney. In the former case the pain will be more circumscribed, and there will be considerable or even acute pain upon pressure, and it will be more persistent, and less inclined to radiate; whereas the pain in neuralgia of the kidney will extend downwards to the organs of generation, to the fore part of the thigh and to the testicle, but the testicle will never be found markedly retracted, like it may be from mechanical irritation of the ureter. Nausea, and even vomiting or diarrhoea, may co-exist with neuralgia of the kidney, but these functional disturbances are comparatively infrequent, when compared with the neuralgia due to a calculus of the kidney, or when the calculus is endeavouring to force a passage through the ureter.

Treatment.—Neuralgia of the kidney is best relieved by opium and by alkalies. I generally give a pill of 1 gr. of the extract of opium with a draught containing $\frac{1}{2}$ dr. of the bicarbonate of potash, 20 gr. of the bicarbonate of soda, 20 gr. of the nitrate of potash dissolved in 1 oz. of the infusion of buchu every two hours until the pain is relieved. I cannot say that the hypodermic injection of morphia has been of equal value. In some cases hot fomentations, with chloral or turpentine, applied to the region of the kidney, will be found very useful; and when the neuralgia is somewhat chronic, great benefit will be derived from the application to the loins of any warm plaster spread upon thick leather. The internal administration of turpen-

tine in 10 drop doses every three or four hours will in some cases act like a charm, but it has to be given very cautiously, and its effect must be carefully watched, and the same may be said of the iodide of potassium. In a few cases where I have tried it, the Chia turpentine in 10 gr. doses every three hours has proved so beneficial that it is well worth a trial, and I would strongly recommend it. I would not recommend the application of blisters in this form of neuralgia, because, in my experience, they have been of little or no value. Both galvanization and faradization should be tried, as in some cases they relieve the pain at once, but in the majority of cases this form of treatment will not be found advantageous.

OVARIAN NEURALGIA.

DR. CHURCHILL speaks of this affection as consisting of a dull and constant or acute and paroxysmal pain, greatly aggravated by standing and generally by walking, with local tenderness and occasionally with great irritability of the bladder. I am certainly of opinion that a true ovarian neuralgia is oftentimes much more common than is usually supposed. When we consider the important function that this miniature organ of the female body has to perform, and also when we consider its sympathy with the generative organs and with the breasts—a sympathy which becomes reflected upon the highest centres of the brain and the other centres of the nervous system and spinal cord—we can scarcely admit that we are at a loss to comprehend the generation of those vague phenomena, not only of the body but also of the mind, which of late years M. Charcot, of Paris, has brought so prominently before our notice. I have no intention, whilst confining my remarks to the neuralgic affections of this organ, to enter into an analysis of the important part played by the ovaries, or of the left ovary in particular, in the production of the most elaborate hysterical fits. Yet some notice, though brief, of the neuralgic, or, as some choose to style it, the over-sensitive state of the ovaries must not be omitted. Neuralgic pain in the iliac region in hysterical women has been observed, and even written about, for the past two centuries. We find our distinguished physician and countryman, Dr. Willis,* so far back as the seventeenth century, writing of checking convulsive seizures by compressing the abdomen, and by preventing them from reaching the head and neck, either by the arms or by the

* Willis, 'De Morbis Convulsivis,' vol. ii. p. 34.

hands, or with sheets. Mercado,* in 1513, recommended friction over the abdomen in hysteria. Boerhave (eighteenth century) speaks of the necessity of compressing the abdomen in hysterical attacks, and Recamier used to place a cushion on the abdomen, upon which an assistant sat himself to relieve the pain in the ovary and prevent it from extending itself upwards.†

M. Charcot directs, in cases of hysterical neuralgia (ovarialgia) *when accompanied with convulsions*, 'That the patient be placed flat on her back, either on the floor, or, better still, on a mattress. The medical man, then, resting a knee on the ground, places his closed fist on the iliac fossa. Great strength is first needed to overcome the rigidity of the abdominal muscles, but as soon as it is overcome the resolution of convulsive phenomena begins to take place. When the first resistance invariably offered by the abdominal walls is overcome, no further degree of strength is required, and the application of two fingers to the presumed seat of ovarialgia is enough to produce the desired effect.' It is well-known that compression of the ovary merely arrests the complete evolution of the convulsive phenomena, and that it does not influence the permanent symptoms of hysteria—such as paralysis, contraction, loss of sensibility, etc. *Ovarian neuralgia* is, for the

* D. L. Mercatus' 'Opera, tit, Devirginum et viduarum affectionibus,' p. 546, Francof, 1620.

† M. Charcot, with his literary no less than his great scientific knowledge in all matters relating to diseases of the nervous system, in speaking of the hysteric epidemic of St. Medard, caused by the religious exaltation of the Jansenists, which broke out on the grave of Deacon Paris, who died 1727, says: 'This epidemic presents two distinct periods. The first was remarkable for the cure of a certain number of patients, amongst whom there were undeniable cases of permanent hysteric contraction: the second for various irregular convulsions, which, however, did not essentially differ from those of the epidemic form of hysteria. It was at this period that the practice of *secours* appeared in the epidemic of St. Medard. Almost all consisted in some kind of compression exerted on the abdomen. They were very curious: 1. A heavy hand-iron was repeatedly struck against the stomach; or, 2. A hammer was used instead; or, 3. A man with his two closed fists would lean with all his strength on the abdomen of the *convulsionnaire*, and call other men to help him; or, 4. Three, four or five persons would climb on the body of the patient, especially of Sister Margot, who liked this kind of help; or, 5. Long bandages were pulled from right to left over the abdomen, so as to compress it. Whatever the mode of administration of this kind of *secours*, it appears to have been always attended with relief.' (Dr. Charcot, 'Ovarian Hyperæsthesia,' *Lancet*, Oct. 5, 1872).

most part, associated with an over-sensitive state of the *whole generative system*, and with an irritable state of the *spinal cord* in particular. So that an arrest of function on the part of the ovary or of the uterus is likely to bring on an attack of neuralgia of either of these organs, and more particularly at certain periods of life, namely, from the age of puberty to the age of five-and-twenty years, or it may become chronic and last throughout the whole life-time of the individual, or it may come on at the climacteric period, from forty-five to fifty years of age. It may be accompanied by some mental derangement, and when it comes on late in life this is very frequently the case; so that we find such a patient, when suffering from ovarian neuralgia, to have also fits of melancholy or undue excitement, delusions, illusions, or hallucinations. When, however, these symptoms of mental disruption occur at the climacteric period of woman's existence, with well-marked signs of an irritable or neuralgic left ovary, there is every reason to hope that by timely care and appropriate remedies they will soon yield to treatment—at all events, such has been the result of my experience.

Ovarian Neuralgia may and does frequently arise without many of the well-marked signs which are so distinctive of the hysterical state (*aura hysterica*); yet when these are sought for they will undoubtedly be found in a subjective condition, and they can be developed by excitants to a paroxysm of the highest intensity from an apparently inactive focus. I cannot enter into a vague dissertation upon the numberless signs and symptoms of hysteria, yet, from the physician's point of view, we are frequently compelled to study these signs in association with neuralgia of the ovary, as well as in connection with abdominal neuralgias in general, for this reason—lest we should be, if not conversant with the true nature of these cases, very often led into error and make grievous mistakes in treatment. I well remember, many years ago, seeing the following case, which made a lasting impression upon my mind. The young person was under the care of a gentleman of large practice and of sound and ripe experience.

CASE LV.—CANCER OF THE OVARY, SIMULATING HYSTERICAL NEURALGIA.

' A young unmarried woman, of 27 years of age, complained of intense pain over the abdomen, but it was much more marked in either iliac region over the site of the ovaries. The abdomen was somewhat distended, but not markedly painful to pressure, except in the immediate ovarian regions. She was well nourished, and her appetite was fairly good. The pain was usually worse at night, when it came on in violent paroxysms, and extended around the loins into the groins and down the thighs; during these attacks she was highly excited and hysterical, whilst at other times she would lie in bed in a state of utter indifference, and unless spoken to quickly, she would not care to enter into conversation or speak to anyone. It is sufficient to say that, although the case was looked upon as hysterical, she died somewhat suddenly, and the ovaries and intestinal glands were found to be infiltrated with colloid cancer '

The pain of ovarian neuralgia is oftentimes cumulative, just in the same way that the warning (aura) of an epileptic seizure or of an hysterical fit is cumulative. There may be, and, in fact, one may say that abdominal distension is, almost always an accompaniment of ovarian neuralgia, and the patient will localise the position of the ovary as being the seat of the pain, and it will often be found that the abdomen will be more distended upon the side of the painful ovary than upon the other side. Again, the abdomen may be distended, and the patient will resist even the slightest touch being made upon its surface by the finger, and at times the weight of the bedclothes will be found to be intolerable, and *active* resistance will be exercised with a shudder if anything like pressure upon the abdomen be exerted. It will often be noticed, if it be sought for, that the skin of the abdomen and the muscles which are in the region of the neuralgic ovary will be in a condition the very reverse of that which we have just described; instead of there being an over-sensitive state of the skin, there will be a want of normal sensibility both in the skin and the muscles, and no pain will be experienced until the ovary be firmly pressed

upon, and then it is quite possible that an hysterical aura may be generated, which will radiate throughout the whole course of the sympathetic spinal centres, until it reaches the head and produces a state of profound unconsciousness. But it is by no means necessary that this acme, so to speak, of the hysterical state should be realised, for the impression made upon the ovary may not extend beyond defined limitation. I have a patient under my care who suffers from ovarian neuralgia, and when the ovary is pressed upon firmly, vomiting ensues, and the pain is immediately relieved. - In another case, when pressure is made upon the painful ovary the face becomes flushed, rushing and roaring noises are heard, the sight becomes confused, and the neuralgic pain of the ovary immediately ceases. If the pressure under such circumstances were continued long enough, a confirmed hysterical fit would be induced. M. Charcot says, and I have confirmed it myself by ample experience, that the paralytic phenomena and other subjective sensations which are associated with painful ovaries are always to be found upon the same side as the ovary which is the seat of pain. There are some observers who maintain that when an ovary becomes the seat of neuralgia it must necessarily be in a state of congestion or even in a state of sub-acute inflammation. This may probably be so ; but I feel quite sure that such is not always the case. There can be no doubt that the ovaries are in women the foci from which many, if not most, of the functional nerve-troubles take their origin which are usually designated hysterical. This practical fact, however, seems to have escaped the observation of the late Sir Benjamin Brodie,* although no man was better aware than he of the many diseases which may be simulated by hysterical women. He says, 'the liability to hysteria is, in fact, among females, one of the severest penalties of high civilisation. It is among those who enjoy what are supposed to be the advantages of affluence and an easy life that we are to look for cases of this description, not among those who, fulfilling the edict of the Deity, "eat their bread in the sweat of their brow."' I do not hesitate to declare that among the

* 'Local Nervous Affections.'

higher classes of society, at least four-fifths of the female patients who are commonly supposed to labour under diseases of the joints, labour under hysteria and nothing else.' Mr. Skey, in writing upon the same subject, refers the hysterical focus to the right ovary; whereas most modern writers, and M. Charcot in particular, have found that, with scarcely an exception, the left ovary is the seat from which hysterical symptoms originate.

The Signs of Ordinary Ovarian Neuralgia are an oversensitiveness or want of sensation in the skin of the iliac region in the neighbourhood of the ovary: there may be pain experienced upon the slightest pressure, or no pain may be felt until the ovary is firmly pressed upon, and between the neuralgic seizures a constant dull aching and somewhat severe pain may be experienced in the iliac regions and the groins, passing along the anterior surface and inner side of the thighs as low as the knee. This pain is usually exaggerated by standing or by exercise, yet we sometimes find that exercise and the erect posture will relieve the pain. It would be almost an impossibility to describe the infinite variety of strange sensations which arise in consequence of an irritable or neuralgic condition of the ovaries; the determination of the pain seems to be towards the thighs and lower limbs in general, but it may extend around the loins, and painful spots can be readily detected upon pressure over the spinous processes of the upper lumbar vertebræ; and when pressure is exerted upon these vertebræ, it is astonishing how reflected abnormal sensations can be developed in almost any part of the body, showing how, in these cases, we have, for the most part, to deal with a highly organised, delicate, and extremely sensitive state of the nervous centres as a whole. There is a form of ovarian neuralgia somewhat different from those to which I have alluded. I refer to the ovarian neuralgia consequent upon difficult menstruation, which is so common in young delicate girls. These patients are usually very pale, and of an inactive and leucophlegmatic temperament; they are wayward, fractious, and irritable; the bowels are usually obstinately confined; they sleep

fitfully and dream continuously; they generally have some morbid tendency; they often complain of headache and flying pains about the limbs, with swelling and sweating of the feet, and even a puffiness about the face and eyelids; they are unable to bear any abdominal pressure, and especially in the region of the left ovary; they soon tire upon exertion, and are changeable, vacillating, and capricious in disposition. At one part of the day they look fairly well, and they feel equal to any exertion, and at another part of the day they feel unable to sit or stand, and do not know in what position to place themselves to be at rest. We may find ovarian neuralgia in a class of individual altogether different from that which has just been described, but due, in like manner, to difficult menstruation—namely, in the stout, robust, over-fed, and inactive class of women. In these patients we see a train of symptoms somewhat similar to the foregoing, and as far as my experience goes, the pain is more localised to the iliac fossæ and the pelvis, and although it extends around the back, there is not usually any spinal tenderness to be found when the vertebræ are pressed upon, yet the pain will often be referred to the left breast, and complaints will be made by these patients that they are unable to take a deep breath. The bowels are invariably most inactive, the extremities, particularly the feet, are cold, and the mind is essentially dormant, if not morbid.

Treatment.—The treatment of ovarian neuralgia will depend upon the nature of the cause of the neuralgia; if the cause is an unhealthy state of the womb, it will be necessary to put the organ into a healthy condition, any misplacement must be corrected, and any unnatural discharge or sub-acute inflammation or ulceration of the os or cervix must be treated upon recognised principles. A succession of blisters applied over the site of the ovary, and the blistered surface dressed with morphia, will be found very serviceable, and so also will the application of hot solutions of the hydrate of chloral, and the hypodermic injection of solution of morphia, and some authorities speak highly of the value of an ointment of belladonna and the iodide of mercury rubbed into

the skin of the abdomen in the iliac region. The bowels should always be well relieved by a dose of calomel and colocynth, or compound scammony powder, or the electuary of guaiacum. These active purges are especially useful in the abdominal neuralgias of young girls, and the perchloride of iron with quinine should be given three or four times during the day. In the ovarian neuralgias of middle life, strong purgation cannot be tolerated, and injections of turpentine and castor oil into the rectum will be found to be very useful, and the internal administration of a pill three or four times during the day, containing extract of Indian hemp and quinine. If there be an hysterical disquietude, mental irritability or melancholia, then the compound assafoetida pill, with extract of opium, should be given three or four times during the day, and the valerianates of iron and quinine may be tried, or a cold compress to the pit of the stomach may be applied night and morning, and worn constantly both night and day. Electricity may be tried, but in this form of neuralgia it has, in my experience, utterly failed to be of any benefit.

NEURALGIA OF THE WOMB

Is essentially connected with an irritable state of the womb, and also with an irritable state of the spinal cord and of the nervous system in general. The hysterical nature of this affection is, I need scarcely say, one of its prominent and characteristic features, and for this reason so much the more are the unfortunate sufferers from this disease to be pitied. I have seen many women cured by appropriate treatment who had suffered for years, and who had even been relegated to the class of hysterics and saturated with valerian without any good resulting. There can be no doubt of this, that any disturbance of the natural offices of this important part of the female economy is productive of much distress and discomfort and unhappiness; and yet it is not unfrequently due to some slight cause which, when once ascertained, is readily and rapidly removed by appropriate treatment. On the other hand, it is usually admitted that many nervous affections and even neuralgic pains are referred to the womb and to the ovaries, when these parts have really nothing whatever to do with their production.

Causes of Neuralgia of the Womb.—These are numerous, and they may be purely local or they may be general. *Local causes* are chronic inflammation of the inner mucous surface of the neck of the womb, usually associated with chronic thickening of the os and cervix as a whole, or it may be with a diffuse endometritis. Ulceration of the os uteri alone gives rise to neuralgia. Any deviation from the normal position of the womb is a frequent source of neuralgia of the bladder and of the thighs, and of the buttocks and the lower ribs. I need scarcely say that cancer of the womb, especially in the ulcerative stage, is one of the great

causes of this form of neuralgia. Dysmenorrhœa gives rise to the most agonizing pain, which is usually relieved by the appearance of the menstrual flow, and is, in the majority of instances, due to a low form of inflammation of the cervical canal, and the pain may be referred to the back, or to the lower portion of the abdomen, or, as Lombe Atthill* states: 'In inflammatory dysmenorrhœa the pain is often more intense along the edge of the false ribs, generally on the left side, shooting up to the shoulder and down to the ovary of that side.' When I was in Ireland, and was talking to Dr. Atthill relative to this cause of neuralgia from chronic inflammation of the cervix, he gave me the following statement of a case.

CASE LVI.—NEURALGIA OF THE WOMB, CURED BY THE APPLICATION OF NITRIC ACID TO THE CERVIX.

'A lady, who was suffering from great pain over the womb and shooting up under the left breast and round to the back, for some few days previous to menstruation, called upon him for his advice. After making an ordinary vaginal examination, he introduced the uterine sound into the cervix uteri, and immediately it reached the os internum it gave her the most agonizing pain. He then told her that he would cure her, and this he did by the application of fuming nitric acid to the cervix.'

I have, since this time, treated several cases most successfully after Dr. Atthill's method.

The *general causes* of neuralgia of the womb are of the same nature as those which are productive of neuralgia in other parts of the body, namely, exhaustive diseases of all kinds, and prolonged chronic forms of disease of the womb itself, associated with chronic and weakening discharges. As general causes, which predispose to neuralgia of the womb, we may reckon the influence of soil, and of the atmosphere, and of exposure to malarial influence. There are other causes, such as gout, rheumatism, tubercle, cold and damp, anæmia, spinal irritation, mental anxiety, dyspepsia, etc.

* Lombe Atthill, 'Diseases of Women.'

The symptoms of neuralgia of the womb are numerous. We can have generated, by reflex irritation through the nervous system, a train of symptoms which are known as belonging essentially to the hysteric, and when such is the case, no part of the body may be considered to be free from some kind of pain either imaginary or real.*

However, in discussing the symptoms of neuralgia of the womb, we will consider those which are directly due to the womb itself, and to those parts which are in immediate relationship with it. In an irritable and neuralgic womb, the patient's attention will in all probability be more or less directed to the womb; and we frequently find that very great effort is required on the part of the physician to make the patient clearly comprehend that there is really not much, if anything at all, the matter with the womb, and that the irritable and neuralgic womb is merely an exponent of the neuralgic habit of body. I have more than one lady under my care at the present time who suffers from an irritable congestive condition of the nervous centres, and one day I have all the signs clearly detailed to me of neuralgia of the womb, and perhaps on the following day these symptoms are succeeded by neuralgia of the bowel, the bladder, the stomach, the heart, or the head; so that, in dealing with these cases, we have to be extremely guarded as to what we say or the mode of treatment which we adopt. For my own part, I am inclined to think that the symptoms of neuralgia of the womb are those which are, as a

* On the subject of the irritable uterus, Dr. Ferguson, in his prefatory essay to Gooch's 'Diseases of Women' (Sydenham Society's edition), gives the following points for consideration: 1. That a pure neurosis or neuralgia of the uterus may exist; 2. That it is apt to be extremely persistent; 3. That one of the seats of this neuralgic malady is the vagina itself, which is so exquisitely tender as to render intercourse intolerable; 4. That, in another form, the purely nervous aspect of the malady is marked by some obvious change in the uterus or its appendages, such as ulceration of the os, or chronic inflammation of the canal; 5. The disorder seems to be of *toxic* origin; those who are most obnoxious to it having frequently an hereditary taint of gout or rheumatism; or else it is, like many other neuroses, an indication of an originally infirm nervous system; 6. The malady is not confined to the single, but when it attacks the wife and mother, its social evils are greatly intensified. All natural and all sexual feeling are perverted, or absorbed in a craving for commiseration, and the results to the family circle are of course disastrous.

that during pregnancy itching of the vulva is sometimes a cause of extreme distress, and may render a very sweet-tempered woman so irritable and cross that there is no living in the house with her.' He mentions a case where the vulva was perfectly natural, and no local application was of any benefit. The cervix uteri, however, was much congested, and presented a superficial granular ulceration around the edge of the os. This was first lightly touched with nitrate of silver, and then smeared over with a mixture of honey and opium (3j ad 3j). Two applications all but cured, whereas on a former occasion the disorder lasted until delivery. Dr. Hardy speaks highly of a stream of chloroform vapour, directed over the mouth of the womb, to relieve pain. I have often cured an inveterate neuralgia of the womb and generative organs by carefully packing the vagina with cotton wool saturated with a solution of hydrate chloral, to which a little turpentine has been added. In fact, when I was physician to the Central London Sick Asylum, so highly did I value the local application of this remedy for the relief of pain, that I have prescribed it for twenty patients of a morning, with the most excellent results. The solution should be applied carefully night and morning, and it should be made as hot as it can well be borne by the patient. In *cancerous neuralgias* it is simply invaluable, for it not only relieves pain and procures sleep, but disinfects the parts, and thus promotes a healthy and not unfrequently a healing surface. Electricity is an agent which is very uncertain in neuralgia of the womb. I have tried it persistently in some cases, without the least good resulting, yet in other cases its effect has been magical, and it is certainly worth a trial. However, if after three or four applications the pain is not relieved, it had better be discontinued. Patients will bear the faradic current very well; the positive pole should be placed over the pubes, and the negative pole (sponge) upon the os and cervix. I have been often greatly disappointed with electricity in those persistent back pains in the sacro-lumbar region which are due to some uterine irritation. I remember that some years ago I even punctured the lumbar muscles and nerves in this region, and passed the electric current

directly through these structures in a large number of cases without any permanent benefit resulting.

The general treatment of neuralgias of the womb is of considerable importance; doubtless the remedies of which we have spoken as serviceable in neuralgias generally will be found in like manner useful for this especial affection. However, in the first place, we must pay particular attention to keep the lower bowel free from fæcal accumulation, for if this be not done, all our other remedies will be found to be of no avail. I have frequently cured patients suffering from abdominal neuralgias—even when the mind has been by sympathy deranged—by the use of turpentine enemata every third morning (turpentine, ʒss., ol. ricini. ʒss. to a pint and a half of warm gruel—which must be made as thick as it can be injected, in order to prevent the turpentine irritating too greatly the mucous membrane of the bowel). I do not advise these injections to be continued for more than a fortnight, neither do I at any time advise the continuous use of the morning injection month after month and year after year. I am quite sure that it sets up a lazy and indifferent action upon the part of the bowel, which must inevitably lead to serious functional derangement, if not to something worse. We must endeavour to keep the portal circulation in a state of activity, and prevent engorgement of the pelvic venous circulation, and so keep the sympathetic abdominal centres free from depression. I find small doses of calomel with podophyllin or euonymin very useful to effect this, followed in the morning by a draught containing potassio-tartrate and sulphate of soda with infusion of senna. A form of pill which I find very useful is composed of podophyllin, euonymin, strychnine, cayenne pepper and peppermint. The iodide of potassium and the bromide of potassium and chloride of ammonium, quinine, opium and arsenic, as well as the valerianates and preparations of iron, have their different uses, and it is impossible to say, without carefully studying the case, that any one of these remedies will act as a specific. Lastly, with regard to diet. The dietary will depend in a great measure upon the age of the patient. If the patient be over 40, I always forbid the use of vegetables, unless they be

of the most digestive kind. Alcohol in any form should not be taken, unless for some special reason it is absolutely required. Whey as a drink and as a food is highly useful. I give animal food or game and fish frequently, and forbid the use of pastry and, as a rule, sweets of all kind. A sedentary life must be strictly forbidden, and the two or three days in bed at the time of menstruation (which is now, I am sorry to say, becoming fashionable) should be given up. If at these times the patient goes to bed shortly after dinner, and rests for an hour or so later in the morning, this is all that will be found necessary. An unnatural procedure is at all times unhealthy.

NEURALGIA OF THE BLADDER.

THE neck and outlet of the bladder, like the neck of the womb, are more frequently the source of neuralgia than is the body of these organs. These 'neuralgias,' which some think proper to call 'irritations,' are frequently a source of the utmost misery, agony and wretchedness in both men, women and children; and for this reason they require some consideration, and especially so in reference to their curative treatment. The most troublesome case that I ever saw of neuralgia of the bladder, with constant desire to pass water and inability to do so without intense pain, was the following case of a little boy of about 7 years of age.

CASE LVII.—NEURALGIA OF THE BLADDER, DUE TO DISEASE OF THE SPINE, CURED.

'His mother stated that he had suffered in this way for over twelve months, and that she had taken him to several hospitals, where he was sounded to find out if there was a stone in the bladder, but no stone could be detected. Previously to passing water, the pain was referred to the penis, and after passing water the pain was referred to the back. The spine was examined; there was no curvature, but he experienced considerable pain when the spinous processes were pressed upon from the second dorsal vertebra downwards. From this, and from the rise of temperature at night, with notable wasting and hectic and occasional shivering, I looked out carefully for some swelling in the loins or in the groin. He was under my care for months in the Central London Sick Asylum, and after some little time I came to the conclusion that the irritability of the bladder was due to an abscess of the spine, chiefly for the reason that the neuralgic pains radiated down the fore part of the thighs, and that if he passed water when

lying flat upon the back the pains were not so severe. On going round my wards, the child drew my attention to a small lump in the left groin, which solved any doubt which I had as to the nature of the case. I immediately aspirated the swelling, and drew off a large quantity of pus; the bladder *at once* ceased to show any signs of further irritability, and, after suitable treatment, he left the building well.'

CASE LVIII.—NEURALGIA OF THE BLADDER, FROM WORMS.

'I was consulted by the mother of an interesting little girl of 9 years of age. She told me that her child, for the past six months, had been complaining of great pain about the lower part of the belly, and of constant desire to pass water; the irritation was always greater soon after the bowels had been relieved. She was growing fast, but she was getting thinner every day, and she did not care for her meals. Her mother stated that she had known her to try to pass water as many as twenty times in the hour, and that the poor child was in the greatest distress. The bladder had been sounded for stone, and none could be detected; her sleep at night had become of late greatly disturbed, and she would wake up in the middle of the night screaming and trembling violently, and apparently greatly terrified about something, of which, however, when she was awake, she knew nothing. Startings in the limbs at night and morning were very common. I went carefully into all her symptoms; there was no tenderness about the spine, no discharge from the ears, and her mother said that she had never known her to pass worms by the bowel. I prescribed a mixture of belladonna and bromide of potassium, with a compound scammony powder and calomel, at the same time requesting the mother to observe carefully if any worms were passed. On the following morning the mother came to inform me that a multitude of little worms were ejected with the evacuations. The cause of the neuralgia and irritation of the bladder was clearly due to the constant irritation about the lower bowel caused by these parasites. In a few days, with appropriate treatment, the child was cured.'

CASE LIX.—NEURALGIA OF THE BLADDER, DUE TO FISSURE OF THE RECTUM.

I was consulted, not long ago, by a lady, recently married, and not more than thirty years of age, on account of excessive

irritability of the bladder and frequent desire to pass water, and if she did not respond to these troublesome calls of nature, she had great difficulty in relieving the bladder at all. She said that it had made her so nervous that she scarcely knew what to do with herself. Her husband was in great distress about her, and told me that she was unable to sleep at night, or mix at all in society. His impression was that she was highly nervous about herself, and several medical men were of the same opinion, "that it was all due to nervousness." I examined her most carefully; there was no spinal deformity, no tenderness upon pressure over the spine, neither was there any tenderness or misplacement of the womb. The bowels were obstinately confined, sometimes for ten days together, and upon examining the anus there was a deep fissure. I asked her if she had suffered from pain in passing a motion by the bowel, and she said that she had some months ago, but that of late, since the bladder had been so irritable, she had only suffered from occasional pain when the bowel was relieved. I divided the fissure freely, and in less than a week all the bladder trouble had disappeared.

CASE LX.—NEURALGIA OF THE BLADDER, DUE TO FISTULA.

' Another lady, of about 40 years of age, with a marked family history of consumption, consulted me in the fall of the year for great tenderness over the lower part of the abdomen and irritability of the bladder. She was in a very delicate state of health, but there were no pronounced signs of phthisis; she said that when she coughed she lost momentary control over the bladder, and some water made its escape involuntarily, but what distressed her most was the aching and sometimes darting pains which she experienced after making water, and the longer she retained her water, so much greater was the pain after she passed it. The pain was most acute after micturition; it extended over the abdomen into the perineum and around the loins. There were no signs of inflammation or catarrh of the bladder, and the urine was perfectly healthy. I asked her if she had pain when the bowels were relieved, and she said yes, but that was of no consequence in comparison with the pain of the bladder. I examined the rectum; the mucous membrane was turgid and relaxed, and on the left side was a blind internal fistula. I then told her that the irritable and neuralgic condition of the bladder was due to the disease of the bowel. Then, with her rather unwilling assent (for

she could not quite understand how anything the matter with the rectum could influence her bladder to such an extent), I laid open the fistula, tied a small pile, and cut across two small fissures in the mucous membrane of the rectum, and all her bladder symptoms vanished.'

CASE LXI.—GOUTY NEURALGIA OF THE BLADDER, CURED.

'A gentleman, 59 years of age, who had travelled much and seen a great deal of foreign service, consulted me in the beginning of the year for an exceedingly irritable condition of the bladder, with darting pains radiating from the loins to the symphysis pubis and the perineum. He dated the attack from a severe attack of gout, from which he had suffered some six months before. The bladder was so irritable, and the desire to micturate so frequent, that his life was a burden to him, and deprived him of his nights' rest. He was quite sure that diet had nothing to do with it, for he was just the same whether he abstained from wine or not, and he had been examined for stone any number of times. The water was certainly variable in colour, and he thought the symptoms were much less severe when he had an attack of gout or if he felt gouty. He was liable to wake sometimes about three o'clock in the morning, with considerable difficulty of breathing, and, upon my putting the question to him, he answered that he had thought himself that the pains of the bladder were of a nervous character, for at times, and particularly under excitement, he felt wonderfully free from them. The prostate was slightly enlarged, but this was relatively of no importance. The urine was highly acid. I told him that I thought all his symptoms were neuralgic, and that they were due to gout. He laughed, and made some remark about "How the opinions of doctors differed!" However, he was quite willing to submit himself to my treatment, which consisted in the administration of 2 grs. of quinine three times a day, and a bottle of Apollinaris water, in which was dissolved 1 dr. of bicarbonate of soda, the last thing every night. In a week he had improved immensely, and in a fortnight his neuralgia and irritable state of bladder were cured. I enforced upon him the necessity of not taking stimulants or wine of any kind whilst he was under treatment.'

These cases which I have just detailed are such as we are constantly meeting with in our practice, and although it is a simple

thing which frequently removes the cause and cures the patient, yet we are often finding patients who, when they come to the physician, state that they have tried everything, and that they have been driven to their wit's end to know what to do. Upon looking over my cases, I almost feel justified in making the assertion that if a man has one organ about which he becomes hysterical, that organ is the bladder. A nervous bladder, or an over-sensitive bladder, is much more common in young children, and in youth at the age of puberty, and in grown-up people from the age of 45 to 60, than it is at any other age. I have known strong, healthy men so highly nervous in this respect, that they have not felt satisfied when told that they have not been suffering from stone in the bladder, until they had consulted half the leading surgeons in London; and, in some instances, more than one sitting is required to settle the doubtful point as to the existence of stone, which only adds to and aggravates the patient's sufferings. Although an irritable neuralgic bladder, with frequent desire to micturate and with full power to accomplish the act, is not a serious matter, yet, when the same irritable and neuralgic symptoms are accompanied with dribbling of urine, and with inability to pass water when the effort is made to do so, and more particularly when the flow of urine from the bladder is more passive than active (that is to say, when the patient is unable to arrest the flow when it has once commenced, or to effect by effort the complete emptying of the bladder), yet we must never forget that symptoms and signs such as these are of grave importance, and that we must then turn our attention at once from the bladder to the nervous centres—either to the brain or spinal cord—where, in all probability, by careful examination, we shall find some degenerative changes commencing which, by mere casual observation, could not be detected. Again, on the other hand, it is our duty, when we have assured ourselves that the diseased condition of the bladder is of a purely nervous character, to make our patients absolutely conscious of the fact, for the reason that such knowledge goes a long way to effect their cure. I have, over and over again, both in men and women, had cause to rejoice with regard

to the correctness of my diagnosis in doubtful cases of disease of the nervous centres, by paying strict attention to the absolute and undeviating importance of these observations. There are some authors who speak of a stammering of the urinary organs, just in the same way as we find a stammering of the organs of speech. I must say that the analogy is somewhat too comprehensive to bear anything like a scientific deduction, yet in practice such an inference may be admissible, and it is then comparable with the defective volition which we find in expectant attention.

A medical friend of mine, with whom I was once staying at the Isle of Wight, informed me that he had a patient, a gentleman of great literary parts, who for many years had been subject to hysterical or nervous retention of urine. So much was this the case, that if unfortunately he wanted to pass water immediately before the delivery of his lecture, he was quite unable to do so, on account of the then excited condition of the brain. At other times, and under ordinary circumstances, he passed his water without an effort, although he suffered from severe neuralgic pains occasionally after doing so.

Quite independently of the cases just quoted, which refer more especially to neuralgia and irritability of the bladder from reflex causes, we are often consulted about a true neuralgia of the bladder itself, and in this respect we not unfrequently meet with some difficulty, for the reason that the pain may be due to some foreign body in the bladder, which may be stone, tumour, cancer, or some villous or vascular growth. In all such cases as these, we have carefully to take into consideration the age of the patient, the especial character of the pain, its periodicity, and its relation to the act of micturition, and of course we also must examine and sound the bladder most carefully for stone. When growths and cancers and tumours are suspected, these may perhaps be detected by gauging and sounding the bladder, but the condition of the urine will often afford the most important guide. Microscopic examination may give evidence of blood cells, and of the epithelium of the bladder, and so on, but which are never to be found in the true neuralgias of the bladder, and to which this article particularly refers.

There are some persons to whom their bladders and urinary apparatus are a constant source of trouble and annoyance, just as to other persons their lungs and their respiratory apparatus give unceasing anxiety, and both of these conditions may be due to some deranged state of the blood, or to an ill-conditioned state of the nervous system. I have known persons who at certain seasons of the year would suffer from neuralgic pains about the bladder, and an irritable state of the urinary apparatus in general, just in the same way that other persons, at the same season of the year, suffer from catarrh of the bronchial tubes, from hay-asthma, from gout, or from ague; and again, just in the same way that other neuralgias and nervous affections would be produced by malaria, by worry, by anxiety, by undue exposure to cold, by sudden change of temperature, by undue excitement, or by any cause that prostrates the vital powers, so, in a similar manner and from the same causes, do we find the neuralgias of the bladder to be induced. If the patient be of an essentially neurotic or neuralgic temperament, and if this kind of temperament be combined with a gouty or rheumatic habit of body, and if the kidneys are irritable, inadequate, and not sufficiently eliminative, then we shall find that, in addition to other morbid symptoms indicative of derangements of the nervous system, he will not unfrequently exhibit very distinct and marked neuralgias of the bladder. Sometimes the bladder will be so irritable that the patient will be constantly desirous to void urine, whilst at other times the bladder will be so inactive, and its walls become so distended, that the patient will be unable to empty the bladder by voluntary self-effort; or, should the act be accomplished, its termination will be followed by the most agonising pain. Now, if in such cases as these we examine the urine carefully, from day to day—namely, that which is passed in the morning, and that which is passed in the middle of the day, as well as that which is passed at night—we shall find a great deal of difference in its density and in its composition, and in the amount of nitrogenous material which it contains. For instance, if, without going into a quantitative analysis as to the amount of the solids and the urea which the

various samples of urine contain, we merely confine ourselves to its density, we shall find that the urine in the morning will be from 1025 to 1030, whilst that at midday, or in the evening, will not in all probability be of a greater density than from 1012 to 1018. It is always useful to examine the urine in these cases of irritable and neuralgic states of the bladder more than once in the twenty-four hours, for if we do not do so we may be misled, and our treatment would then become inoperative and inefficient. Where we found that a patient passed urine of a persistently high density, the treatment would be precisely the reverse of what it would be were the patient passing water of an extremely variable, or even of a persistently low density.

Treatment.—The successful treatment of a neuralgic or irritable bladder will depend in great measure upon the cause of the irritability. We have first to satisfy ourselves: 1. Whether the bladder contains any foreign body; 2. Whether its walls are the seat of any tumour or cancerous growth; 3. Whether there is sub-acute inflammatory action going on in the mucous surface; 4. Whether the irritability of the bladder is due to a diseased condition of the urinary passages; 5. Whether it is due to some reflex irritation, as disease of the womb, the arms, the rectum, the prostate, the kidneys, the spinal cord, or even the brain; and 6. Whether it is due to an acid condition of the urine, or even to dyspepsia. These various conditions having been carefully considered, we shall then be in a fairly good position to adapt our remedies in accordance with what may be in our estimation the cause of the neuralgia. If the neuralgia of the bladder be due to a foreign body, nothing but its removal will effect a cure. If it be due to a tumour, its removal will be necessary. If it be due to cancer, the case will be hopeless, and subcutaneous injections of morphia in full doses will relieve the pain, or the bladder may be injected with warm water and opium to effect the same object. If it be due to sub-acute inflammatory action in the mucous membrane of the bladder itself, then 2-gr. doses of quinine should be given three times a day, with dilute mineral acids and demulcent

drinks, such as the almond emulsion, or a decoction of couch-grass. The patient should be made to sit in a warm bath for twenty minutes or half an hour every night, and a suppository of belladonna and morphia should be introduced into the rectum. In some of these cases I have found it very useful to use a self-retaining catheter, so as to prevent the incessant irritability of the neck of the bladder and constant desire to pass water. If the neuralgia be due to some reflex irritation, on account of disease of some neighbouring part, this must be attended to and cured. If it be a pure neuralgia, then it must be treated in a similar manner to that which has been laid down for the treatment of other neuralgias. I find quinine, in full doses, to be most valuable, and at the same time I endeavour to induce my patients to give up all kinds of stimulants, and to take as much milk or whey as they possibly can. If the patient is young and robust, then large doses of alkali, dissolved in Apollinaris or Vichy water, will be found useful. Should the patient be pale and nervous, and with symptoms of impaired nervous power, then opium, strychnine, iron and arsenic are indicated, with cod-liver oil and a highly nutritious diet. A blister applied over the pubes, and the blistered surface dressed with morphia, is sometimes very useful.

NEURALGIA OF THE INTESTINES.

PRACTITIONERS of medicine cannot be thoroughly conversant with this agonising form of neuralgia, until they have had a somewhat extended experience in diseases of the brain and spinal cord. I now exclude from consideration all cramps and irregular spasmodic movements of the intestinal muscles which are due to lead poisoning, to gall-stones, etc., to obstruction of the bowels, either by cancerous growths, invagination, twisting of the bowel, or stricture, and those which are due to the action of some indigestible material, and I intend to dwell only upon those painful and agonising intestinal seizures which are purely and essentially of a neuralgic nature. They may be said to be hysterical, but a more inappropriate term could not by any possibility be devised. There are two classes of cases which ought to be considered distinctly from each other, although I must admit that they are in their essential nature very much alike. The first class of cases is to be found in those persons who are the subjects of epileptic seizures, or who have an epileptic or hysterical tendency. The second class of cases is to be found in those who suffer from chronic interstitial inflammatory (not localisable) general changes in the spinal cord. It may be called a sclerosis, but I would rather designate it 'a sub-acute inflammatory and degenerative change,' which may produce either a sclerosis of the connective tissue on the one hand, or an albumenoid vascular and softening metamorphosis on the other; and because I am desirous in all matters concerning these other neuralgias to be essentially practical, I will leave unnoticed their pathological changes, and consider only their clinical outcome in reference to the production of neuralgias of the intestines. A mere functional inactivity of the intestinal muscles with abdominal

distension, accompanied with tenderness of the bowels, which is said to be of a dyspeptic nature, is, I have no hesitation in saying, in a very large proportion of cases, due to a functional derangement of the brain or spinal cord, or of both combined; and patients so suffering may not of necessity be either epileptic or hysterical, yet it will invariably be found that they are of a highly nervous temperament. The following cases will exemplify my line of thought in reference to this matter, and though many such cases are looked upon as ovarian, the ovary has nothing whatever to do with their production.

CASE LXII.—NEURALGIA OF THE INTESTINES.

'S. V., aged 34, was admitted under my care at the Central London Sick Asylum in June, 1873. She became almost completely paralysed in all the extremities, owing to some sudden shock to her nervous system, and the arms and the legs became rigidly flexed. She remained twelve months in this way; she could not move a limb, neither were the limbs sensitive to impressions. The sphincters were incompetent. The return of movement commenced in the toes, and after this she regained the power of movement completely in the arms, but not in the legs, which became permanently paralysed. The sphincters regained their normal power. The lower limbs were subject to the most distressing reflex movements; but independently of these movements, she suffered from *agonising pains in the abdomen*. These pains appeared to alternate with the convulsions of the legs. They were best relieved by 1-gr. doses of morphia. The following are the symptoms of her abdominal neuralgia, which I copy from my note-book: "There is extreme facial pallor and distress, so that I know at once what is the matter with her. (Patients are unable to describe these pains accurately.) She says that the pains in the stomach are more like severe labour pains than anything else she knows of—they are simply agonising. They come on quite suddenly, and as suddenly leave her. She may be quite well now, and in a quarter of an hour may be in the deepest agony, from no apparent cause. There is some tenderness over the abdomen upon pressure, but no flatulent distension. There is sometimes vomiting. The attack lasts for half an hour or longer, if it is not checked by morphia. It is usually succeeded by hemorrhage from the bowel, or diarrhoea. During the height of

the neuralgic seizure beads of sweat stand out upon the forehead, and the tongue becomes dry and brown. The temperature and pulse remain natural. She voluntarily made the following statement: "Although my pains are so severe, if my friends or a stranger come to me suddenly, and commence a conversation with me, and take my attention from myself, the pains leave me." Yet, under ordinary circumstances, it required 1 gr. of morphia, or sometimes even 2 grs., to relieve her. These pains are always relieved by blistering and counter-irritation.'

CASE LXIII.—NEURALGIA OF THE BOWELS.

'John H., aged 26, was admitted into the Central London Sick Asylum under my care with atrophic changes in the muscles of the arms and legs; he suffered in the same way as the former patient; the pains of the abdomen were really agonising, and at times they caused him to be almost maniacal; he said that his bowels felt as though they were being drawn up into knots. These attacks would last for twenty-four or even forty-eight hours, and usually passed off with severe diarrhœa.'

Of course, cases such as these—and the signs and symptoms are much the same in all of them—are frequently being found by those physicians who have 'unlimited fields' for observing the various diseases of the spinal cord in the asylum and workhouse infirmaries of this country, but they are not so commonly seen by hospital physicians. In examining the notes of a large number of cases of diseases of the spinal cord which have come under my care during the past ten years, I find that these abdominal neuralgias were more or less frequent in a very large per-centage of them, although not so frequent as the transverse bodily antero-posterior girth, with which every one is so familiar.*

* I attribute these painful attacks to an inhibitory action of the brain or spinal cord upon the abdominal sympathetic ganglia. The knowledge of the wonderful effects produced by one nervous centre upon another nervous centre, by what we call an inhibitory influence (due to impaired vaso-motor and trophic energy), is only now in its infancy; yet the little we know of inhibitory influence is sufficient to lead us to reflect upon the vast and important part which such an influence must exert in arresting and diminishing function, even in health, and in the production of nervous derangements. Taking these primitive derangements of function as a type of inhibitory influence, we can the

Although I hold that, as a rule, neuralgias of the intestines are essentially due to marked organic changes in the spinal cord, or to an inherent epileptic or hysterical condition of the nervous system as a whole, yet there are undoubtedly some cases which are due to a temporary interference with the normal reflex movements, which are in continuous action between the sympathetic and the spinal centres. A severe colic may be set up by worms in this way, as well as by any other foreign body; and here I would refer to a not uncommon form of *passive neuralgia*, which is to be found for the most part in women, and which affects the descending portion of the colon, the rectum and the anus. Within the past few years I have had many such cases under my observation. They are not associated with the recognised irritable spine, although they are for the most part to be found in those persons who are of a nervous and neuralgic temperament. Most patients, whilst labouring under this condition, complain of an inactivity of the bowels; that the bowels are never relieved without taking medicine; that the passage of fæces during the act of defecation is accompanied by the most agonising pain, not confined to the anus, but traversing the whole of the lower bowel and the iliac fossa, and even the whole of the buttock. If the abdomen be examined, the descending colon will be found slightly distended, and no pain will be experienced upon deep or superficial pressure.

more readily understand how, in a state of actual disease of the brain and spinal cord, we find the integrity of the nervous centres so unstable and so unevenly balanced, that correlative action is scarcely ever found, and even an attempt on the part of a given centre, or set of nervous centres, to perform a definite act, whether the act be mechanical, automatic, or voluntary, produces in another centre, or set of centres, an inhibitory influence which leads to an arrest, or exaltation or depression of function, the outcome of which is abnormal action, either of the mind or body, or of the two combined. Take, for instance, the horrid reflex movements of the lower limbs, which are so common in degenerative changes of the spinal cord, which come on immediately the patient drops off to sleep. When the patient is awake the correlative action of the nervous centres is in a *measure* maintained by voluntary action, or I would rather say volition. When the patient goes to sleep volition is dead; then automatism reigns supreme, and intrinsic spinal reflex acts are carried on. When the patient becomes conscious, it is then that volition has to play a secondary part, for the reflex or automatic acts continue until the reflex nervous energy has become expended and inhibitory action ceases.

When the rectum is examined by the finger or speculum, the patients complain of great pain ; and so sensitive has been this part, that they have been unable to bear the introduction of suppositories or the nozzle of the enema syringe. Fissures of the rectum are invariably absent, but the mucous membrane of this part is turgid. It not unfrequently happens that the pain will extend down the leg, not in the form of a sciatica, but patients will complain of the leg feeling heavy, hot, burning, and destitute of normal sensibility. I have often proved the essentially neuralgic nature of this diseased condition by its sudden migration to another part of the body without any apparent cause. A lady who is at present under my care, suffers from this form of abdominal neuralgia, with neuralgic headaches, photophobia, and other nervous symptoms, and it not unfrequently happens that when the neuralgic headache is severe, the abdominal neuralgia is absent, and *vice versa*. *Neuralgia* of the lower part of the rectum, including the sphincters, is not a common condition. It must be remembered that I am not unmindful of the painful condition of the rectum due to a mass of hardened fæces, but I do not refer to this state. If the rectum be examined in the neuralgic state to which I do refer, this part of the bowel will usually be found empty, and patients, when the neuralgia comes on, apparently suffer the most intense and agonising pain. I saw a patient so suffering only a few months ago.

CASE LXIV.—NEURALGIA OF THE LOWER BOWEL, DUE TO
IMPACTION OF FÆCES IN THE SMALL INTESTINES.

‘ A lady, who was over 50 years, felt that her bowels were going to be relieved in the ordinary way, and she made the customary effort ; nothing, however, passed from the bowel, but she experienced the most agonising pain, which lasted for nearly a quarter of an hour. When I saw her the pain had somewhat subsided, and I at once examined the rectum ; the examination gave her no pain, and the rectum was found to be free from fæcal matter, and apparently healthy. Nevertheless, there was a lump of something high up in what I considered to be the small intestines. I ordered an enema of castor oil, turpentine and gruel to be administered,

which brought away a large collection of fæcal matter, and the patient was thus at once relieved. For ten days she had no return, but at that time she was seized in a precisely similar way, and again relieved by an enema as before. This neuralgia of the rectum was undoubtedly due to an overloading of the small intestines, for a compound rhubarb pill every night kept the bowels in a state of activity, and the neuralgia did not return.'

Treatment.—I need scarcely say that in this form of neuralgia we have to be most careful in making a correct diagnosis, for many of the diseases of the abdomen are frequently obscure, and it would be unfortunate for the practitioner and the patient if commencing cancerous disease were set down as a mere neuralgia, and for this reason, we have to judge from negative as well as from positive signs, from the subjective as well as from the objective side. However, in all cases we must be sure whether the bowel is performing its especial function in an efficient manner, whether, in fact, it is morbidly inactive or morbidly active. It is highly important that the bowels should be thoroughly relieved by an enema of turpentine, castor oil, and gruel; then, if we are satisfied that scybalæ are not present, 1-gr. doses of extract of opium may be given every two hours, or, if the condition be more chronic, a pill may be given three times a day, consisting of extract of belladonna, quinine, and Indian hemp. Horse and walking exercise, Turkish baths, etc., will be found advantageous. If organic disease of the spine exist, there is no remedy of more value than morphia and ergotine injections.

NEURALGIA OF THE JOINTS,

Hysterical Affections of the Joints.—The late Sir Benjamin Brodie was the first surgeon who called the especial attention of the profession to these painful affections of the joints, and so common were they in his experience, that he went so far as to say that at least four-fifths of the so-called joint diseases which occurred amongst women were of this nature. In reading over the admirable lectures* of this most distinguished surgeon, relative to these and kindred nervous affections, one is struck by their simple truthfulness. Sir Benjamin Brodie raises no false theories or conjectures as to a practice; the reverse of what, however, is the prevalent fashion amongst many writers of the present day, whose theories may be as easily unsettled and upset as chaff by a puff of wind. At the end of these lectures I find the following remark, which I here insert, as the advice is of too much importance to be lost sight of. Sir Benjamin Brodie says: ‘Before I quit the subject I shall trouble you with one further piece of advice. I have told you that it is most important that you should not mistake cases of nervous affection for those of real local disease. It is equally important that you should not mistake the latter for the former. Whenever you are in doubt, be careful that you do not employ any kind of treatment which would be injurious if local disease existed. A short delay will always enable you to understand the exact nature of the case, so that you can no longer hesitate as to the remedies which are required for its relief.’ Our present most distinguished surgeon, Sir James Paget, has written a series of articles upon the same subject,† and Mr. Wm.

* ‘Lectures Illustrative of Certain Local Nervous Affections,’ by Sir Benjamin C. Brodie, Bart., 1837.

† See *Lancet*,

Adams and Mr. Barwell have also given the subject their consideration. The ripe judgment and practical experience of my late distinguished teacher, Mr. Hancock, were very conspicuously shown in all these cases. I have, upon more than one occasion, seen his magical influence immediately render an hysterical immovable limb so far movable, that the patient was enabled, and consequently glad to, get out of the hospital; and such cases are seen constantly in our everyday practice. Yet there are two sides to *feigned* disease, or, as I would rather have it called, '*disease by impression.*' The physician and the psychologist would hesitate before they said, "There is nothing whatever the matter with the patient. It is only hysteria!" Still, we have it upon record, in the writings of many men, and especially in the works of Mr. Abernethy, that a sharp remark or speech has at once removed the false impression which existed in the patient's mind, and so it has been said that the disease has thus been cured; now, from my own experience, I doubt the truthfulness of many of these observations. I have watched, by carefully timed experimentation in many hundreds of cases, the powerful effect which the mind has upon the body. I have seen a lady, the subject of epilepsy, run a pin deeply into the quick of the nail to ward off an hysterical epileptic seizure. Another lady, a patient of mine, bites her tongue severely in order to remove the morbid impress (aura) preceding a fit of epilepsy. This condition may likewise be remarked in cases of organic diseases of the nervous centres, if we will but observe the influence which the mind has over the body. I am at the present time attending an Indian officer, who is suffering from paralysis of the lower limbs. He had just returned from India some three years ago, when he found that he had difficulty in co-ordinating the legs in walking (ataxy). He at once set off to consult a London physician, one skilled in nervous diseases, but he experienced considerable difficulty in walking from the cab to the doctor's door. After the consultation was over, and the doctor had assured him that there was nothing much the matter, he felt (to use his own words) so braced up, that he walked back to his club, and walked nearly as well as he ever did in his life. However, he has

never walked so well again, and he never will do, for he now suffers from confirmed paralysis. This is an instance of the influence of mind over the body apparently for the patient's good, and yet, in fact, this false confidence was seriously to his disadvantage. Now, with regard to the nervous affections of the joints, it often requires common sense and sharp insight (instinct), as well as medical skill, to come to a right conclusion concerning their real nature, no less than the means to be adopted for their curative treatment. Hence we hear of the wonderful cures effected by charlatans and quacks. It is not always an easy task to diagnose in an offhand and precise manner a joint which is merely the seat of hysterical pain from a joint which may be the seat of commencing and serious disease. By way of example, I will take the case of a nervous young lady, who meets with some trivial accident, when she complains of severe pains either in the spine or in some joint, and by way of response to the many affectionate inquiries of her friends, she has a fit of hysteria. The pain then continues from day to day, and the patient will be particularly anxious to lead those about her to the conclusion that her sufferings are of the most unbearable character, and when she is being watched the slightest movement of the limb or of the body will, to all appearance, give her great pain; but the medical man, who has in his mind's eye the condition of the limb and of the joint itself when real disease exists, will not be led away by any vague and ill-defined symptoms, which merely simulate a diseased state. An hysterical limb may of itself be diagnosed from a diseased limb (without paying any attention to the constitutional state of the patient): 1. By its usually extended position; 2. By a marked absence of the signs of inflammation; 3. By the rapid changes which take place either in the temperature and colour of the limb itself, or, in the joints for instance, the temperature of the joint may be of icy coldness and then, perhaps, quite suddenly it will rise to a temperature which is greatly in excess of the normal. Sometimes creaking noises may be heard in the joint, which may lead the uninitiated to the conclusion that the cartilage is undergoing ulceration. If these conditions persist sufficiently long, the limb

may assume unnatural postures, and become rigidly contracted, not gradually, but suddenly during the night. The pain is not usually confined to the joint; it occurs in paroxysms, and is usually more marked in the evening than in the morning. Such are the signs and symptoms which are, as a rule, found to indicate this affection. Of course our chief object is to make sure that we have a neuralgia of the joint to deal with, and not an inflammatory diseased state.*

In making a correct diagnosis, we cannot always be guided by the hysterical state of our patient, although the hysterical habit of body is always an important element for us to take into our consideration. Esmarch says, the diagnosis will rest upon the *remarkable disproportion between the violence and duration of the affection and the small amount of local disease.*

Treatment.—The chief aim of the physician must be the same in the treatment of this disease as it should be in the treatment of other hysterical nervous affections, namely, to control and subdue all morbid mental processes by the firm and judicious exercise of his will, which the patient must, if possible, be made to feel is superior to her own. All anxiety and solicitude on the

* I quote the following from Sir Benjamin Brodie's work on hysterical affections, p. 81: 'As long ago as the year 1818, I was requested to visit a lady in the country on account of a disease of the knee. I was led to believe that she had laboured under an inflammation of the synovial membrane, which had in a great degree subsided, but that the harder textures had suffered in consequence, and that the cartilages were in danger of being ulcerated, and I recommended a plan of treatment accordingly. After some time, however, there was a manifest aggravation in all her symptoms. She suffered more than ever, so that she became anxious to undergo the amputation of the limb. I was now again consulted respecting her, but from the written accounts which I received, I concluded that the pain did not indicate the existence of any serious disease, and that the circumstances of the case did not justify so violent a measure as had been proposed. However, her wishes remained unaltered, and two surgeons of eminence in the country, yielding to her entreaties, performed the operation. On dissection of the amputated joint, they were surprised to find that there was no collection of matter in the cavity, that the cartilages had disappeared in one spot of very limited extent, and that there was no other mischief. The stump healed readily enough, but she obtained no relief. I had the opportunity of seeing her some months after the operation, suffering more than ever with intense pain in the stump, and violent convulsive action of the muscles which move the thigh-bone upon the pelvis.'

part of the patient's friends must be discarded at any cost or sacrifice of feeling, and here the physician often finds the greatest difficulty he has to encounter. Sympathetic influence of over-anxious relatives and friends does more to retard the recovery of our nervous patients than anything else, and the most vexatious thing is that we cannot get the friends of the patient to comprehend this. It is of no use telling them that their scrupulous readiness to meet every request, to gratify every wish, and to assuage every imaginary evil, is the very thing which, as physicians, we wish them to avoid; and so we are, however reluctantly, compelled to fight our battle of will, perseverance, and hope, against the moral antagonistic sympathy of those who ought to aid us. Still, much can be done with tact, and by gaining the confidence and complete mastery over these patients. The joints should be carefully and *very firmly* manipulated at each visit, and the patient's attention should at the same time be diverted to other matters. I have often, by a little firm persuasion, induced a patient to walk round a room, and subsequently round a garden, who could not previously by any possibility put her foot to the ground. I well remember the case of a young lady, who suffered from an hysterical affection of the knee joint. The case was so clear that there could scarcely have been any difference of opinion at all about it. Yet her friends could not be convinced that such was the truth. She had a brother, of whom she was very fond, whose familiar name was Jack. This was in my younger days, and I thought that her friends were inclined to think my opinion, to say the least of it, not quite satisfactory. So I strolled to the window, and said, very excitedly: 'Good gracious! poor Jack!' My patient, who before could not bear her knee to be touched, or move the limb in any direction, immediately jumped out of bed, exclaiming: 'What is the matter?' when I put on my hat and walked out of the house. I was never forgiven, but still my patient was cured. In all such cases as these it is better to leave the joint alone, and to apply the stethoscope to the heart every day, and to pay attention to the pulse and the tongue, and the pupil of the eye. These are mental derivatives of no mean value, and will frequently

be found of more use than flying blisters and injections of morphia. Any arrest of function, whether in the liver, the bowels, or the kidneys, should be corrected and a course of strychnine, iron, quinine, arsenic, douches, and so on, may be employed with great advantage. Galvanism is frequently of the greatest use. If there is one point which, to the physician's mind, is of greater value than another in making a correct diagnosis, it is the family history, which should always be carefully sought after ; and if it be neurosal, then this fact, with comparison made between positive and negative signs, will invariably lead us to a correct treatment.

SPINAL IRRITATION.

THIS condition of the spine is so essentially connected with the hysterical and the nervous temperament, that whether it be in the male or the female sex, it cannot well be disassociated from either; and when it exists in the male sex we usually find a feminine type of character which is really striking.

The phrase 'spinal irritation' was, until within the past twenty years, equally as much in vogue as the term 'hysteria' is at the present time. But as we have grown older so our knowledge has increased, and many of the so-called 'spinal irritations' are now known to be due to some definable condition or disease of the spinal cord.*

Though we are fully justified in asserting that most of the cases

* I would not have it supposed for one moment that I agree with those observers who consider that spinal irritation is consequent upon a bloodless condition of the posterior columns of the spinal cord, neither do I agree with those who think proper to refer indiscriminately cases of spinal irritation to the hysterical side of human nature, as all my experience is utterly opposite to such unfounded doctrines. I have proved, by pathological research, over and over again, that serious lesions of the spinal cord, such as inflammatory and vascular changes, with destruction and softening of the cord in the lower dorsal and lumbar regions, may have gone on for some time with the so-called signs of spinal irritation, and with no marked paralysis whatever, until twenty-four hours before death. To instance the truth of my statement, I will give short notes of the following case :

CASE LXV.—DEATH DUE TO SUB-ACUTE SOFTENING OF THE SPINAL CORD AND PHTHISIS—THE SYMPTOMS AND SIGNS DURING LIFE BEING THOSE OF SPINAL IRRITATION.

'M. C. was admitted into the Central London Sick Asylum under my care, in the year 1872. She was a dark-complexioned woman, and thin in body, and said that she had been suffering from ill health for the greater part of her life. She was hysterical, and at times was morose, whilst at other times she was so hilarious that the nurse frequently made a complaint against her. There was slight cough, but no expectoration; auscultation gave evidence of some con-

of spinal irritation which are so frequently presenting themselves to our notice are, in fact, not due to any absolute disease of any portion of the spinal cord or its coverings, yet they are really consequent upon some arrest of the functions of the spinal cord, not, indeed, in any definable and definite area, but rather in reference to it as a whole, and in reference to its harmonious action as a

solidation of the right lung. She used frequently to complain of flying pains in different parts of the body, and of various neuroses of the sympathetic ganglia, such as noises in the ears, and throbbings of the temples, difficulty in swallowing, sense of choking in the throat, palpitations of the heart, gastric neuralgia, flatulent distension of the stomach and bowels, acid bilious eructations, vomiting, constipation, and, but not unfrequently, diarrhoea. At times she would have retention of urine, and this was usually considered to be hysterical. The urine was passed in a large quantity, was of *high* specific gravity, but free from sugar. At times she was exceedingly irritable, and so nervous that the least noise or shock caused her to start and shake violently. Her tongue, mouth, and throat were invariably dry, and this gave her great annoyance. She complained occasionally, but not constantly, of a feeling as though her spine were on fire, and as though hot water were being poured down it. This was usual when she felt tired and fatigued, and then the spinal pains, which were situated in the lumbar region, travelled down the backs of the legs, and gave her severe cramps in the calves, and occasionally the legs felt heavy and numb, and became momentarily contracted, and the soles of the feet tender and extremely sensitive. The whole of the spinous and transverse processes were extremely tender upon pressure. There were, however, no objective signs of paralysis, and of bodily temperature at night I considered due to the advancing mischief in the right lung. She improved, however, under the influence of bromide of potassium and arsenic. The night nurse's attention was suddenly aroused in the early morning by her screams; this was at 2.15 a.m. When I saw her, she was complaining of agonising acute pains at the bottom of the back, both legs being simultaneously contracted, but more particularly the left leg; the whole body, however, participated in these convulsive seizures, and each seizure was associated with three distinct shocks; during each shock, which lasted some seconds, the body was arched as in opisthotonos, and each succeeding spasm became more violent, the teeth being firmly clenched, and the eyes fixed and staring. After each paroxysm she asked to be turned over, and to have her back held or pressed at the bottom. After the last of these paroxysms she complained of a pain at her heart, and expired. She was seized with these paroxysms at 2.15 a.m., and died at 2.30 a.m. She was conscious until a moment before she expired. At the *post-mortem* examination nothing abnormal was found, excepting in the right lung and the spinal cord, liver and spleen. The upper third of the right lung was consolidated, of a dark purple-red colour, and in its substance there existed four yellow cheesy scrofulous masses; the same kind of deposits were also found in the liver and the spleen. Upon splitting up the membranes of the spinal cord, the pia mater was found to be intensely congested and covered with extravacated blood from the third pair of dorsal nerves, and from this point to the tenth pair of dorsal nerves the cord was softened and disorganised.'

complex nervous centre. However valuable (and the extent of value cannot be doubted) the great researches of the physiologist may be in solving the precise functions of the columns, and of the grey matter of the spinal cord, still we have no evidence of any real and practical value to guide us to the conclusion that the seat of a neuralgia is in the posterior nerve roots, or that a spinal irritation is due to a want of blood in the posterior columns of the spinal cord. Dr. Hammond,* however, in his comprehensive and masterly work on diseases of the nervous system, makes the following remark: 'I have stated it as my opinion that the essential condition of "spinal irritation" is anæmia of the posterior columns of the cord.' I have the greatest respect for Dr. Hammond's opinion upon all questions relative to diseases of the nervous system, but I am, in this exceptional instance, compelled to say that he has not (or, if he has, he does not give it) sufficient evidence to guide him to such an important conclusion. In looking over the literature upon the subject of spinal irritation, we find that our own countrymen have written much more about it than our continental brethren have done, and in many of the cases which are quoted as spinal irritation, one sees pretty clearly something more than a mere arrest of function of the spinal cord, and certainly when this is the case the term spinal irritation is not an appropriate one; for instance, a sub-acute inflammation of the spinal cord, or its coverings, will arrest its function and give rise to an irritability: but this, I contend, is not the 'spinal irritation' of recent authors; neither do I, in these few notes upon the subject, wish it to be understood that such is my opinion. However, there are cases, I must admit, which from clinical signs alone are somewhat difficult to diagnose, and which not unfrequently tend to lead us somewhat astray, in reference to the exact pathological changes which are going on in the spinal cord. I have always considered, and in this respect my ideas have not changed, that, in the majority of cases of 'spinal irritation,' the irritant has been from *without* rather than originating within the cord. I consider that the irritation starts from one or more sympathetic centres,

* 'Hammond's 'Diseases of the Nervous System,' New York, 1876, p. 400.

and that, in consequence, the normal reflex excitability of the spinal cord is either unduly excited or unduly depressed, and this undoubtedly gives origin to a secondary reaction on the part of the spinal cord itself, which is due to its own perturbed function. The sensory ganglia and the roots of the posterior spinal nerves, as well as the posterior root zones and lateral columns of the cord, are thus primarily implicated. Hence we find the tender points of the vertebræ are not so much over the spinous processes as they are over the transverse processes, which are more in relation with the posterior spinal nerves. But we have no reason for the supposition that the posterior columns of the spinal cord are alone involved. On the contrary, we have every reason to believe that the integrity of all the columns of the cord are more or less interfered with. The view that spinal irritation is due to eccentric causes has been the prevailing one with most writers upon this subject. There are some writers, however, who attribute it to a low form of inflammation of the cord or of its membranes. Mr. Teale* was of this opinion, and also M. Ollivier.† Mr. Teale bases his opinion, for the most part, upon the success which he derived from the use of leeches and blisters. However, let the exact pathological condition of the cord be what it may, in spinal irritation we shall always find a clear nervous history. From a large number of cases which have come under my own immediate observation, I have invariably found this to be the case; and moreover, it is more frequently so than not in those cases of irritable spines which are the result of railway concussion.

Spinal irritation is a rare disease in man, nevertheless cases do occasionally occur, as we find, in the course of one's practice. The following is an explanatory case :

* 'A Treatise on Neuralgic Diseases dependent upon Irritation of the Spinal Marrow and Ganglia of the Sympathetic Nerves,' London, 1829.

† 'Traité des Maladies de la Moëlle Epinière,' troisième édition, Paris, 1837, tome ii. p. 209.

CASE LXVI.—SPINAL IRRITATION, CURED BY MORPHIA AND STRYCHNINE INJECTED HYPODERMICALLY, AND THE USE OF TURPENTINE ENEMATA.

‘A gentleman, 19 years of age, came under my care in the summer of 1877. His friends had intended to send him to Oxford, and bring him up for the Church ; but his health was so indifferent that they had given up all hope of his ever being able to follow any profession. There was a very marked nervous history in the family, and also a history of epilepsy. For many years his health had been failing—in fact, he had been delicate from his birth ; he had always complained of great weakness and pain in the back, and also of severe headaches, which were sometimes attended with vomiting. When these headaches came on, everything appeared to be moving rapidly around him, and his body turned round two or three times, and then he fell down powerless, but not unconscious. At times he presented all the ordinary signs and symptoms of hysteria, and the head would become intensely hot, whilst the feet and lower limbs would be of icy coldness. For a month or six weeks he would suffer from almost constant vomiting, and the bowels would be obstinately confined. He would complain of all sorts of vague symptoms ; sometimes he imagined that sparks of fire were passing before his eyes, and when he tried to read, the letters became elongated and ran together, so that he was unable to make out anything distinctly. He then kept to his bed, and although he had no actual paralysis of the lower limbs at this time, yet they were so weak that he was unable to stand upon them. On account of the excessive vomiting he became greatly emaciated. Some few weeks after this the vomiting ceased, and he complained of want of feeling in the lower limbs, and he appeared to lose power in them. He possessed perfect control over the sphincter muscles of the bowel and of the bladder. There was apparently no cause for this condition, which was one of spinal irritation, and might be said to be one of descending spinal irritation, for the following reasons : “ In *the first instance* there was marked tenderness in the cervical spine, irritability of temper, sleeplessness, nausea, vomiting, palpitations, hiccup, and feeling of heaviness in the upper limbs ; then the spine in the dorsal region became tender, and lastly the spine in the lumbar region, when the lower limbs became partially paralyzed.” I tried many remedies, such as strychnine, bromide

of potassium with valerian, counter-irritation, and blisters to the spine ; but nothing seemed to do him any good, until I injected him hypodermically with strychnine and morphia, and administered by the bowel enemas of turpentine, castor-oil, and gruel, and also faradized the spinal column. After this he rapidly recovered, and ultimately became quite well.'

The causes of spinal irritation are much the same as the causes of neuralgia. Anything which tends to weaken the nervous system by over and undue excitement or by depressing agencies, such as fright, unfortunate love, severe watchings, overstrain both of mind and body, sexual excitement—unduly gratified, sexual excesses, and exhaustive diseases of all kinds, has a tendency also to induce in those persons whose nerves are devoid of stability, an irritable state of the spinal cord.

The symptoms are numerous and variable, and independent altogether of the arrest of function, which so frequently attends this complaint ; *there may be mental derangement.* In many of my patients this has been the case, and the form of mental derangement has been hysterical melancholia. Girls from eighteen to twenty-five will gradually get out of health, complain of feeling weary and tired upon the least exertion ; their features will rapidly change in the course of a few minutes ; perhaps, whilst one is talking to them, they will become deadly pale and haggard-looking, and they will say that they must sit down, for they cannot stand, as their legs ache so, or their back is so very painful, or they have pains flying about here, there and everywhere ; they are ill-tempered and irritable, and shun the society of their companions ; they complain that they are unable to attend to anything, and that their minds seem to be wandering ; they cannot sit still in one place, or keep their attention fixed on any kind of work for more than a few minutes together ; when sitting down, even if they are occupied, their legs will be in constant motion ; they say that they cannot take interest in anything, that they want to be alone, and yet they feel miserable unless some one is with them ; they will constantly complain of headache ; the special senses—sight, hearing, smell, taste and touch—may either be exalted or perverted ; the tongue is usually clean, but the voice will vary, and

sometimes it cannot be raised beyond a whisper ; there will be a flat, hacking cough, feeling of inability to swallow, sense of heaviness, with neuralgic pains of the arms, coldness and blueness of the fingers ; neuralgic pains about the breasts, more especially about the left breast, a burning sensation in the left side, flatulent distension of the stomach and intestines, and obstinate constipation sometimes for weeks together, not unfrequently succeeded by diarrhœa ; there will be copious secretion of urine, often great irritability about the bladder after micturition, and painful menstruation, which will come on every two or three weeks, and the flow may be copious, excessive, or very slight, and also, not unfrequently, both vaginal and uterine discharges, and there will generally be found more or less tenderness over the left ovary. When the spine is examined it will be found to be tender upon pressure ; this tenderness may be diffused, or it may be limited to certain points. The patients, after defecation, will frequently complain of intense pain in the lower bowel, which is persistent for hours together. The lower limbs will be heavy, as though they were made of lead, or, on the other hand, they will feel burning hot, with abnormal sensations of pricking and tingling. These signs, which I have just enumerated, are common to an ordinary irritability of the spine ; and patients, if they are not properly treated, will go on in this way for months, and even for years, until the condition becomes almost hopelessly chronic : and I have no hesitation in saying that many a valuable and what should be a happy life is, for want of proper treatment, sacrificed to bear the stings and miseries of this uncharitable disease. I say uncharitable, for the reason that the world, on the one hand, is often little inclined to give such patients any sympathy, whilst, on the other hand, their immediate relatives are far too sympathizing ; and so, between the conduct of the world in general and of friends in particular, patients are left to live on, and vegetate, and suffer, and, in consequence, they frequently think themselves the most ill-used beings and the greatest sufferers in the whole of creation. I have, at the present time, a young lady patient, just placed under my care, who writhes with pain in her back when she attempts to play the

piano, or to perform any other manual operation, such as knitting, sewing, etc., and then, even lying down upon the back scarcely gives her any relief. A patient suffering from an irritable spine may feel quite well in the morning, when, from some slight fatigue or over-excitement, all the severe symptoms will return. It is not an uncommon thing for these symptoms to come on at times with intense severity, and to produce serious constitutional disturbance, such as excessive tenderness down the spine, and a feeling as though boiling lead were being poured down it, constant vomiting, obstinate constipation, intense neuralgic pains of the chest and the bowels, inability to sleep, and excessive prostration. The following case is one of spinal irritation, which was brought on by slight concussion :

CASE LXVII.—IRRITABLE SPINE, CURED BY ERGOT AND
BROMIDE OF POTASSIUM.

‘A young lady, aged 23, who I at once saw was of a highly nervous temperament, consulted me under the following circumstances. She told me that her spine was always weak, and became very painful whenever she was fatigued. But one day, whilst out for a walk, she stepped somewhat suddenly from the pavement into the road, and not aware of the depth of the pavement, her feet came violently upon the ground, and the concussion sent a jarring sensation along the spine, and she immediately fell forward upon her hands and knees ; when she got up and tried to walk she found that she was unable to walk straight. On the following day she complained of being very ill, vomited after everything she took, and said that her legs felt so heavy that she could scarcely drag one after the other. Her legs were tender to the touch and felt as though innumerable pins and needles were pricking them. The middle of the back was extremely tender, so that she could scarcely bear the slightest pressure upon it. She also suffered from spasmodic twitchings, running from the lower limbs up the spine to the back of the head, and at night, when she put her feet into hot water, they seemed as though they were screwed to the bath, and that she had no power to get them out of it, and she said the muscles of the calves became agitated like machinery, and cramp like electric pains shot through them. I saw her the third morning after the occurrence, and she was then pale and weak, and walked with considerable difficulty, and there was an absence of normal sensibility in the lower limbs. The whole of

the spine was more or less tender, but she was quite unable to bear the slightest pressure upon the six lower dorsal vertebræ. The case was clear enough; she was suffering from shock to an irritable spine. I applied a long plaster of belladonna, camphor, and opium to the spine, along its whole length, and gave her a mixture of ergot and bromide of potassium in small doses, to be taken every hour, and in the course of a week she was quite well.'

CASE LXVIII.—SPINAL IRRITATION ASSOCIATED WITH
MENTAL DERANGEMENT, CURED BY COUNTER-IRRITATION, ETC.

'Some three months ago I was called to see a young lady of 19 years of age, whose manner and general behaviour gave her parents the idea that she was losing her senses. I was told that she had given her affections to a gentleman, and that the match could not be tolerated, and that the whole affair was broken off without ceremony or consideration. However, the young lady became depressed, gave up all her customary pursuits, and refused to see anyone, or mix in society, unless she was absolutely compelled. She was naturally of a delicate constitution, highly nervous, and her family history, from a mental point of view, was not satisfactory. She had been under medical care, and had been taken about from one place to another for change; but still her condition did not improve, and her friends were of course becoming very anxious about her. From an exceedingly amiable kind-hearted girl she had become irritable, and at times even mischievous; she was unable to sleep, and would get up at all hours of the night and walk about the house. At one time she would complain of her head aching, at another that the spine felt as though it was burning, and again at another time that the legs were hot, heavy, and tender. The special senses were over-sensitive, and noise and light were intolerable; even the ticking of a clock or the movement of a newspaper was unbearable. The feet were, as a rule, very cold, and so were the hands. But the signs of hysteria were markedly absent. The bowels were obstinately constipated, and were not relieved sometimes for two or three weeks. The whole of the spine was exceedingly tender. When it was pressed in the cervical region, with the gas burning before her sight, she said that the light of the gas was like a thousand lights before the eyes. When the spine was pressed in the occipital region, she felt as though she would be choked. When pressure was made upon the spinous processes of the vertebræ from the tenth dorsal,

she became pale, sick, and faint ; and when pressure was exercised upon the lower lumbar vertebræ, she complained of pains down the fore part of the thighs ; when she stamped her heel upon the ground it caused her to tremble from head to foot, and jarred the spine from one end to the other. Menstruation was excessive, and accompanied with pain. The temperature was not increased, the pulse was quite normal, the tongue was clean, but she was constantly thirsty. I gave it as my opinion that she was suffering from an irritable brain and spinal cord, due to shock, and that in all probability it would be some time before she recovered. Several physicians had ordered her to take bromide of potassium, with tincture of nux vomica and ammoniated tincture of valerian, but the mother said that the peculiar condition of the spine had escaped their notice. She had been advised to use cold shower baths and cold sitz baths, and to be compelled to walk for three or four hours. All these remedies, with many others, had been tried without doing the girl any good. I told the mother that four things were essentially requisite for her cure. The first was sleep ; the second was nourishment ; the third was to keep up an action of the bowels every day ; and the fourth was to blister the spine. Sleep was procured by 1 gr. of the extract of opium and a glass of port-wine negus, after the salts of morphia and chloral had been tried and found to be of little use. Food was given *volens volens* every two hours, with a fair amount of wine. The bowels were kept open every morning by enemata of turpentine and castor-oil, and six blisters, the size of a shilling, were applied to the spine—namely, over the fourth cervical spine, the second, sixth, eighth, and twelfth dorsal vertebræ. In a week after this she slept well for six hours out of the twenty-four, the tenderness of the spine was scarcely appreciable, she walked a fair distance without feeling tired, and at the end of three weeks she was cured.'

The following case is even of still more interest, on account of the severe paroxysms of functional disturbance with which the ordinary spinal irritability was oftentimes accompanied :

CASE LXIX.—IRRITABLE SPINE, CURED BY ATROPINE.

'C. N., aged 34, was admitted into the Central London Sick Asylum in 1875 ; she was one of seven children, and the family was highly nervous and consumptive. She said that she had been

ailing from her cradle, had had epileptic fits during her childhood, had only menstruated once in her life, had always suffered from a weak back, and that when she became excited she would shake from head to foot. She was short of stature, but there was no curvature of the spine; she was irritable, morose, and discontented; she complained of headaches, and she also said that the dreadful feelings down the spine were more than she could endure. The spine was especially tender over the third and ninth dorsal vertebræ, but at times this tenderness increased, and the whole of the spine became acutely tender to the touch, and felt, to use her own words, as though it were on fire. The nurse used to say the attacks were due to temper; but this was not the case, and the poor sufferer could not hinder them from coming on. These paroxysms of pain would be associated more or less with the symptoms of hysteria, but the whole of the sympathetic system of nerves seemed to be involved. The paroxysm came on with a feeling of sickness and giddiness, and the mouth became parched; there was great distress at the heart, and inability to take a deep breath; the pulse was normal, but the respirations were hurried and panting, and severe pains shot through the abdomen, which gave rise to the feeling that the bowels were being torn. The bowels were always most obstinately confined, and the urine was scanty and of a high colour. I find it noted that the pulse would equal the respirations, namely, 60 per minute. The voice was scarcely audible. No sleep could be obtained; and it was with difficulty that she could be induced to take any food, for if she did not vomit, it caused the unbearable pain in the back to increase. It was noted also that the pneumogastric nerve greatly participated in the irritability of the nerves generally, as shown by dyspnœa, dysphagia, oppression at the chest, partial palsy of the diaphragm, load at the stomach, and acute dyspepsia, slight jaundice, etc. The paroxysms were best treated by the administration of atropine in $\frac{1}{16}$ gr. doses; and as the pulse rose, so the more acute symptoms subsided, and when the pulse reached 120, the tenderness of the spine and the irritability of the sympathetic nervous system decreased, and she improved rapidly.'

I have quoted these cases, from amongst many others, to show what various and different symptoms are associated with an irritable state of the spine.

Diagnosis.—It is not always an easy thing to diagnose at first

sight a simple irritation of the spine, especially when it is complicated by disturbance of the sympathetic nervous system from some other affections of the spine ; and for this reason, that the hysterical symptoms interfere with what might otherwise be a very easy and by no means difficult matter of recognition. For instance, disturbances, both of motion and sensation, may occur in myelitis, or in spinal irritation ; but in spinal irritation these derangements of motion and sensation are rarely, if ever, so marked or so persistent as they are in inflammation of the spinal cord. Again, in the latter case, the bladder and the bowels are often unable to hold their contents, whilst in the former case they are not in this way interfered with ; and further, the contractions of the limbs due to myelitis are excessively painful, whilst those which are sometimes due to spinal irritation are rarely, if ever, painful. Then in myelitis there is the sensation as if a tight cord were drawn round the body, which is rarely, if ever, the case in spinal irritation. There are other signs, such as spasms of muscles, reflex movements of the lower limbs, tendency to vaso-motor derangements, sloughings of the buttocks and heels, which are even present, in a greater or less degree, in inflammation of the spinal cord, but which are never present in spinal irritation. It only requires a little care in considering the various signs and symptoms, in order not to be led into error. It is perhaps a question whether an irritable spine may not, in the course of time, lead on to more serious and organic changes in the spinal cord itself. My experience is opposed to such a result. There can be little doubt that many spines are said to be merely irritable, when they are, in fact, in the first stage of some organic change. I have seen several cases of this kind in young girls, and the diagnosis was made out to be 'irritable spine' because there was great tenderness and no sign of curvature. Yet, the 'irritability of the spine' was due to caries of the vertebræ, and to the collection of pus. In such cases as these we must be careful in making our diagnosis, because the health, comfort, and happiness of the individual will frequently depend upon it, and the treatment of the one case is entirely opposed to that of the other. In these

cases of spinal irritation very much may be done in the way of treatment, but we must endeavour to make our diagnosis quite clear. It would be a great mistake, and yet not an uncommon one, to envelop the body in irons and leather straps, for spinal irritation. Such a barbarous mode of procedure may be tolerated in some cases of spinal curvature ; yet, for my own part, I cannot but think that this cumbrous machinery is very often productive of the most serious consequences, if not of absolute injury.

Treatment.—The treatment of an irritable spinal cord consists chiefly in the administration of those drugs which are known to diminish the reflex excitability of the cord, such, for instance, as the bromides of potassium and ammonium ; and, if the theory of Dr. Hammond be true, that in this affection the posterior columns of the cord are bloodless, then strychnine, upon theoretical grounds, ought to be of great value, and so ought the salts of zinc, quinine, and caffein.* And so in practice they undoubtedly are. There is no drug more useful, in my experience, than the sulphate of atropia, in doses of $\frac{1}{16}$ gr. I usually give it with the liquor arsenicalis and quinine, three times a day, soon after meals ; it opposes the transmission of centripetal excitation to the cord, and at the same time stimulates the nerves of nutrition, and, in

* Dr. S. Mehnizen, in Pfluger's 'Archiv.' (Band vij. Heft 4, 5), gives the results of a series of experiments which he has made with regard to the effects of various agents on the reflex irritability of the spinal cord. He found that *bromide of potassium* rapidly depresses the excitability of the spinal cord, and ultimately entirely abolishes it ; and he gives certain experiments, which show that it is not due to the action of this salt on the periphery or on the nerve cords, but upon the cord itself. The *salts of zinc* have a similar action. He considers that the *acetate* might properly be regarded as a narcotic. *Chloral hydrate* lowers the reflex activity, and its action is also central. Experiments with *strychnia* brought out the curious fact, that whilst the nerves and muscles became highly sensitive to *mechanical* irritation, there was no material increase in their reaction upon the application of chemical stimuli. *Quinine*, even in moderate doses, rapidly diminishes and ultimately extinguishes the reflex activity of the spinal cord ; but this action is apparently not direct, but in a great measure indirect, through disturbance of the circulation and arrest of the heart's action. *Alcohol* (10 per cent.) first and for a long time greatly lowered, and then exalted the irritability of the spinal cord. *Caffein* rapidly lowered it, and almost entirely abolished it in four hours.

fact, the nutrition of the cord itself. Dr. Hammond recommends the use of alcohol, and in this I quite agree with him, but I would prefer to give my patients port wine rather than rum or brandy. Opium is useful, and it should be given freely; 1 gr. of the extract may be given three times a day, and the dose gradually increased, until as much as 3 grs. are given three times a day. *Counter-irritation*, in some form, is certainly most useful, and blisters with morphia dressing are the best. The compound iodine liniment of the London Pharmacopœia is oftentimes very useful, and either the tender spots alone, or the whole spine, may be painted with it. Calisthenic and dumb-bell exercises are, as far as my experience goes, highly injurious. The spine should be well rubbed night and morning. I have often found a belladonna, opium, and camphor plaster very useful, when applied the whole length of the spinal column. One important element in the treatment of this affection is *rest*; of course moderate exercise should be taken, but no strain, either of the mind or of the body, should be enforced; a highly nutritious diet of easily assimilable food must never be forgotten; and cod-liver oil and cream should be taken in as large quantities as the stomach can tolerate; all restraint and confinement to indoor pursuits are bad.

Formerly, it was a common practice to apply leeches to the spine, but I need scarcely say that this treatment is not in agreement with our ideas at the present day. Erb says: 'When it can be had, the air of *mountains* and *forests* is to be sought, and a moderate *cold-water treatment* will be especially valuable, when applied in a high mountain climate.' There are some physicians who lay great stress upon the value of the salts of iron in this disease, and no doubt its administration in some cases appears to be indicated, but I would rather rely upon the other remedies which have been noticed.

Galvanization is certainly most useful, and all authorities seem to be in agreement upon this point. The current should not be too strong, and, in my opinion, it should be continued for some twenty minutes, or even half an hour, at one sitting; both poles

should be placed upon the spine, and the strength of the current should not be more than the patient can comfortably bear. The application should be made daily for a week, and then it should be left off for a week, and after this recommenced. General faradization may be used upon alternate days.

I here conclude my observations upon neuralgia and its treatment. I might have written more extensively upon the subject, but the observations I have made, though concise, will, I trust, be found clear and practical, and give at least some ideas in regard to the nature of neuralgias and some suggestions in regard to their medical treatment.

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